THE ACQUISITION OF PEDAGOGICAL EXPERTISE IN DANCE: A CONSTRAINTS-LED APPROACH

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Abstract

The aim of this PhD research program was to explore the acquisition of pedagogical expertise in dance teachers. A review of the literature on dance pedagogy and expertise revealed three limitations in relation to dance teachers' pedagogical development. First, the literature suggested that a dancer's transition to teacher was traditionally based on replication of previous teachers' behaviours. Second, the literature additionally identified that there appears to be a tendency within the dance field to accept as dance teachers those who have rich and varied experiences as expert dance performers; although they may have little pedagogical knowledge and experience. Thirdly, there is not a unified theoretical consensus on how to analyse the acquisition of pedagogical expertise in dance teachers.

The majority of theoretical approaches to dance pedagogy have been based on traditional information processing theory and within the theoretical framework of cognitive psychology. This latter approach can be viewed as limited because of its exclusive focus on the individual and neglect of important ecology influencing an individual's behaviour. Some promising research in the dance and sport literature has theorised individuals as dynamical systems performing in their ecologies. The *ecological dynamics theoretical approach* is multidisciplinary in nature and allows theorisation of a range of factors in human performance systems, such as those found in dance. Within this approach, the *constraints-led theoretical framework* allows analysis of environmental, task, and individual factors. Given the lack of prior research in the field and the variety of dance experience to be studied, it was concluded that combining the constraints-led theoretical framework with a *qualitative approach* would be appropriate to undertake a retrospective investigation of the potential constraints influencing the acquisition of pedagogical expertise. The following research questions (RQs) guided the general enquiry.

How can we understand dance teachers' acquisition of pedagogical expertise from a constraints-led approach? Specifically:

RQ 1. Which environmental constraints can be identified? What is their role?

RQ 2. Which task constraints can be identified? What is their role?

RQ 3. Which individual constraints can be identified? What is their role?

A qualitative methodology was therefore established in order to investigate retrospectively what the constraints influencing the dance teachers' acquisition of pedagogical expertise could be. Ten teachers of ballet and contemporary dance were recruited from an Australian tertiary institution (with a focus on vocational dance training), after the application of a criteria to classify dance teaching expertise. Participants were then individually interviewed utilising a semi-structured, in-depth interview protocol in order to explore meaning and gain a thorough understanding of participants' life experiences regarding the acquisition of pedagogical expertise. Exploring dance teachers' pathways to pedagogical expertise by means of utilising a semi-structured interview as a data collection instrument proved critical to this research project, as it enabled participants to share rich descriptions of their life experiences.

This research project included an initial data-driven thematic analysis followed by a theory-driven thematic analysis. In other words, both inductive and deductive thematic analyses were conducted and, after extensive analysis and refinement, the interpretation of rich data concerning participants' life experiences, allowed for the identification of five major themes that influenced their acquisition of pedagogical expertise. These themes were then mapped into the constraints-led theoretical framework as environmental constraints (mentors, role models, and students); task constraints (rules); and individual constraints (needs). These environmental constraints were then explored with reference to previous research related to each specific theme (i.e., mentors, role models, students, rules, and needs) as well as with reference to empirical research and the theoretical principles of the constraints-led theoretical framework.

The results of this research study provide theoretical as well as potential practical contributions to the fields of expertise and dance teachers' pedagogical development. Findings suggest that the pathway to the acquisition of expertise is individual, multifactorial, and depend on the individual's self-awareness of their intrinsic dynamics. However, it is acknowledged that this research project was specific to ten ballet and contemporary dance teachers from an Australian tertiary institution, whose focus was on vocational dance training. This contextual specificity

constitutes a limitation; therefore empirical generalisation might not be possible due to the presence of potential contextual influences, such as organisational and geographical influences, that may not be present in other environments. Additionally, a further limitation of the study involves the small sample size (i.e., ten participants). However, it is argued that the informal processes of acquiring teaching expertise identified in the research findings and interpreted within the theory of constraints, appear to have had a strong impact on individuals' acquisition of pedagogical expertise. Therefore, in view of the fact that constraints are present in every environment, *theoretical generalisation* may be possible because it allows the theory of constraints to be applied to new situations without having to explore them again.

While the findings of this research project identified the informal processes of acquiring teaching expertise and thereby added to the field of pedagogical development of dance teachers in Australia, its conclusion does not claim that the research solved all the problems related to dance teachers' pedagogical development. In particular, there are other contexts that have formal processes aiming at dance teachers' pedagogical development. For example, in France, individuals need to obtain national accreditation to become professional dance teachers. In this study, although data analysis identified formal processes as significant for initial pedagogical development, formal processes did not appear to be important for the acquisition of pedagogical expertise. Consequently, analysing formal processes for dance teacher development was beyond the scope of this study and such processes were therefore not scrutinised.

The conclusion of this study drew attention to the importance of being aware of constraints, while also addressing dance teachers' pedagogical development in specific contexts. To this extent, theoretical generalisation potentially implies that dance teachers' training and developmental programs might benefit from exploration of individuals' intrinsic dynamics in relation to environmental (i.e., mentors, role models, students), task (i.e., ballet and contemporary rules), and individual (i.e., needs) constraints within their respective contexts. For instance, dance teachers' developmental programs could include numerous opportunities for informal interaction with mentors and peers. Additionally, design of formal pedagogical practice could include: informal training; enjoyable activities aimed at the satisfaction of individuals' developmental needs; the creation of learning

environments that facilitate discovery and exploration of several teaching strategies; and the establishment of opportunities for individuals to explore the unexpected. Above all, the design of such pedagogical developmental programs should avoid the pursuit of an ideal teaching behaviour. These points are all expanded in detail in the thesis.

Previous research has suggested that not everyone can become an expert dance teacher. However, the findings from this research project suggest that if consideration of the constraints found in particular teaching and learning environments could be included in developmental programs, individuals belonging to those particular environments would most positively improve their pedagogical effectiveness. In summary, the rich findings from this study highlight the potential of understanding constraints within their ecologies in order to improve dance teachers' pedagogical development.

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USA - United States of America

Statement of Original Authorship

The work contained in this thesis has not been previously submitted to meet requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

QUT Verified Signature

Signature:

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Chapter 1: Introduction

Chapter 1 introduces the aim of this research project and identifies significant theoretical and experimental limitations in the pedagogical development of dance teachers, as revealed in the dance pedagogy and expertise literature. These observations are analysed and discussed throughout the following sections. At the end of this chapter, a synopsis of the thesis structure is presented to elucidate how the following chapters fit within the thesis.

The effectiveness of dance teachers has been a concern since the 1980s (Ryan & Stephens, 1987). Initially, dance research focused on dance teachers' deficient practices and on the causes of those deficiencies. A major issue highlighted in the literature was that teachers of dance lacked knowledge about effective teaching practices (Howse, 1987), whereby dance teachers acquired their teaching skills by replicating their own previous teachers' behaviours being offered as the explanation (Fortin & Siedentop, 1995; Lakes, 2005; Paskevska, 1992). The literature on pedagogical expertise (Bereiter & Scardamalia, 1993) and dance pedagogy (Erkert, 2003) has described learning from previous teachers as a 'master-apprentice' interaction or as 'apprenticeship by observation' (Grossman, 1990). This relationship between teachers and students was explained as being expressive of conservatism in teaching (Grossman, 1990) because when students become teachers, they have the tendency to replicate teaching behaviours and strategies they have been exposed to as students lacking reflecting on teaching methodologies and goals (Cuban, 1984).

Research has contended that, in general, dance teachers' pedagogical behaviour remains largely based on replicating previous teachers' behaviours (Dragon, 2015; Erkert, 2003; Fortin, 1993). Lakes (2005) argued that the tendency to replicate previous teachers' behaviours is due to particular influences from past times, such as previous teachers' beliefs, rules, and ideologies alongside the curriculum, syllabus or lesson plan. The teaching models established by previous teachers, even if unrelated to teaching effectiveness, and even though not explicitly taught, are often innately acquired by novice dance teachers as part of their learning experience (Lakes, 2005). For instance, Ureña (2004) investigated different nationalities such as, American, Mexican and Russian, concerning professional and university dance major

individuals' enjoyment of ballet class during deliberate practice, and concluded that ballet class was rated as not enjoyable. Ureña explained that although individuals may not enjoy ballet classes, they engage in not enjoyable and strenuous ballet classes because they perceive these activities as important for skill mastery. Ballet learners cannot learn ballet independently from their teachers; therefore, they need to be dependent on them. This ballet learner's dependency on ballet teachers emphasises the importance that ballet teachers have over ballet learners and suggests that experiencing ballet teachers teaching supports the replication of previous teachers' behaviours when ballet learners become teachers themselves. However, significant limitations have been identified in the literature from dance teachers reproducing previous teachers' behaviours such as: having a focus on teaching technique as subject matter (Dragon, 2015; Morris, 2003), lack of knowledge about pedagogical goals (Warburton, 2008), and lack of reflection about teaching and learning processes (Fortin, 1993). These limitations, as explained later in this thesis, suggest that the experiential nature of learning how to teach by reproducing previous teachers' behaviours, rooted in traditional dance teaching (Dragon, 2015; Lakes, 2005; Schnitt & Schnitt, 1987), might limit dance teachers' acquisition of pedagogical knowledge and skills.

A recent review of contemporary approaches to dance pedagogy stated that the landscape of pedagogical practice has evolved significantly over recent decades, and currently, it is generally recognized that effective dance teaching involves going beyond a single focus on technique (Sööt & Viskus, 2013). This recognition could be argued to have been gained due to the field of dance focusing upon developmental trends of contemporary dance pedagogy:

> the holistic model of dance teacher education; self-regulation and reflection in learning; somatic approach; dance as an art form in relation to dance pedagogy; forms of co-operation between different art forms, the role of new technology and mass media in dance education; multicultural approach; gender and sexuality (Sööt & Viskus, 2013, p. 290).

A broader focus of dance teachers has been observed to occur particularly among those who teach in higher education institutions and therefore engage in educational programs in order to be pedagogically effective (Leijen, Lam, Simons, & Wildschut, 2008; Stinson, 2010). However, in a study describing the pedagogical

practices of four dance teachers, it was acknowledged that although they engaged regularly in pedagogical courses to develop their pedagogical knowledge and skills, those dance teachers considered it more important to follow the teaching behaviours and practices of their previous teachers than to adopt course-oriented pedagogic practices (Sims & Erwin, 2012). These dance teachers were primarily instructors for a dance technique class for undergraduate dance majors in a higher education institution in the Midwestern United States; and, as explained by Sims and Erwin (2012, p. 138), these dance teachers followed their previous teachers' behaviours because "dance experience outweighs the influence of pedagogy courses on dance teachers' teaching practices".

As a consequence, Sims and Erwin (2012, p. 138) advised that the "key for the dance world is to ensure that dance instructors are universally employing effective and efficient management and teaching strategies so these practices will be passed on from generation to generation". One concern, however, remains: how is it possible to pass from one generation to another "effective and efficient management teaching strategies" (Sims & Erwin, 2012, p. 138) in a constantly evolving world? A second consideration similarly arises: can teaching strategies be applied universally, or should they vary because they require specific contextual knowledge to be effective? Previous research on dance pedagogy has discussed the need for dance teachers to acquire current knowledge about the world, educational theories, and research into human learning, in addition to social and cultural factors influencing learning and teaching (Andrzejewski, 2009; Bonbright, 1999; Green, 1999; Kahlich, 1993; Risner, 2010a; Warburton, 2008). This perspective, however, strongly contrasts with the previous traditional processes of dance teachers' learning how to teach based on replicating their previous teachers' behaviours (Bakka, 1999; Erkert, 2003; Fortin & Siedentop, 1995; Huddy & Stevens, 2014; Kimmerle & Côté-Laurence, 2003; Lakes, 2005; Paskevska, 1992).

1.1 THE INFLUENCE OF PREVIOUS DANCE TEACHERS

The relationship between teacher and student has been described in the dance context as a master-apprentice relationship (Bond, 2010; Erkert, 2003; Huddy & Stevens, 2014), where it has been characterised by individuals replicating skills and behaviours demonstrated by their previous teachers (Gibbons, 2007; Purcell, 1994). The practice of replicating previous dance teachers' behaviours has been

acknowledged as typical in dance teachers' pedagogical practice, given that new teachers feel comfortable in teaching the way they were taught by their own dance teachers (Bolwell, 1998; Stinson, 2010). However, learning how to teach solely by replicating previous dance teachers' behaviours has been observed to possess a number of limitations. For example, it has been suggested that teachers that have the tendency to replicate previous teachers behaviours might not be aware of what their previous teachers' pedagogical goals were (Grossman, 1990).

1.1.1 Goals

Grossman (1990) argued that the lack of awareness about their previous teachers' goals is due to the fact that when teachers experienced their previous teachers' approach, they were students themselves. From a student's perspective, goal orientation is usually towards learning, in which case her or his focus is on mastering and learning the subject matter; or student's goals might have an ability orientation (i.e., one whereby her or his focus on demonstrating their ability to other students) (Wolters, Yu, & Pintrich, 1996). On the other hand, a teacher's goal orientation might be towards pedagogical success, that is, oriented towards effectively helping individuals understand and learn subject matter, (Weinstein & Mayer, 1986); or, for example, in relation to dance teachers, effectively conveying amongst others, dance technique, artistry, history, and nutrition to students (Kassing & Jay, 2003). The examples above highlight the differences between student's and teacher's goals; hence, they illustrate why it is difficult for students to have access to knowledge about the goals which might have influenced their teachers pedagogical processes (Hutchings, 1996; O'Keefe, Lecouteur, Miller, & McGowan, 2009).

Previous research on pedagogical expertise has claimed that teachers have knowledge of goals and choose suitable processes to help learners reach those goals (Berliner, 2004). Although no explanation of how goals guide the choice of pedagogical approaches was provided in the research, it was further claimed that during action, experts can determine which information is important to attend to (Berliner, 2004). Research within ecological psychology is useful for understanding how goals guide the choice of pedagogical means and the links between goals, behaviour, and experts' information selection. From an ecological perspective, goals influence control of action because they determine the affordances (i.e., opportunities

for action (Gibson, 1986)) for controlling strategies for perception and action (Riccio & Stoffregen, 1988).

An illustration of how affordances can shape strategies for perception and action from an expert dance teacher's practice would be the teacher perceiving the causes for student learning difficulties. For instance, learning difficulties could be related to students' previous experiences, social contexts, physical limitations, and personal attitudes (You, 2009). Subsequently, the teacher would explore varied teaching strategies for students' learning to occur while addressing the abovementioned causes, rather than merely directing students' efforts to the correction of technical problems (You, 2009).

Previous research in sport expertise has provided evidence that individuals explore environmental affordances and develop functional patterns while trying to attain specific goals (Davids, Araújo, Seifert, & Orth, 2015; Davids, Button, & Bennett, 2008; Seifert, Button, & Davids, 2013). This indicates that the acquisition of sport expertise is dependent on the attunement to affordances which supports goal-achievement. Hence, the research by Davids and colleagues (2015), Riccio and Stoffregen (1988), and Seifert and colleagues (2013) suggests that replicating previous dance teachers' behaviours without knowledge of what those teachers' goals were, might present difficulties for dance teachers trying to exhibit effective pedagogical behaviours. This is due to dance teachers' potential lack of understanding regarding which information they need to become attuned to, and which pedagogical action might be appropriate for guiding individuals towards the attainment of specific learning goals.

1.1.2 Reflection

The use of simple replication of previous dance teachers' behaviours suggests that there might not be much reflection on the part of teachers regarding their teaching behaviours and pedagogical effectiveness (Fortin, 1993; Lakes, 2005). Dance teachers' potential lack of reflection is a concern, given reflection appears important in facilitating the identification and awareness of one's teaching belief systems and practice (Bramald, Hardman, & Leat, 1995; Stinson, 2010). For example, reflection might involve enquiring about prevailing values and perceptions concerning dance teaching, such as: What are important characteristics of dance training?; What are one's beliefs about teaching dance (Kassing & Jay, 2003); or

wondering if one's current teaching behaviours are consistent with the attainment of pedagogical goals (Stinson, 2010). The purpose of reflection is, therefore, to facilitate thinking about individual experiences and practices as opportunities for learning, and to potentially release an individual from her/his habitual way of behaving (Kinsella, 2001; Procee, 2006). Teachers' reflections about teaching are important because reflection allows them to be responsible for their own pedagogical development and effectiveness (Nunan & Lamb, 1996); hence, reflectiveness has been identified as a characteristic of expert dance teachers in finding creative pedagogical solutions (Chappell, 2007b). Furthermore, reflection has been pointed out as being essential for achievement of pedagogical adaptive expertise and for engaging teachers in continual learning (Berliner, 2001; Darling-Hammond, 2006).

A possible explanation for teachers' lack of reflection might be that their learning experiences when dance students, took place from the perspective of being a student, not a teacher, and they took place in past specific space, time, and socio-cultural contexts which may not be relevant to their current situations (Malmberg, 2006). Yet, these past learning experiences appear to be strong, elaborate, capable of shaping belief systems, and influencing teaching behaviours (Bramald, et al., 1995). For example, it has been reported that previous teachers and the environment where individuals studied dance has an influence on individuals' behaviour and personality (Alter, 1997; Van Rossum, 2001), which suggests that teachers' practices are related to their perceptions of the teaching practices of their previous teachers in specific contexts.

From an ecological perspective, contexts are characterised by specific constraints (Newell, 1986) and affordances (Gibson, 1986) which might affect what an individual learns and how it can be applied (Barab & Plucker, 2002). Barab and Plucker (2002) argued that an individual's ability is shaped as an assembly of functional relationships distributed across individuals and their specific contexts, which supports the view that learning, as a student, is different from learning as a teacher. The application of these ideas to the learning from previous teachers' approach to teaching, suggests that how students learned was teacher centred because the teacher controlled teaching events while the student learned passively (Cuban, 1984). Learning as an intending teacher, however, is different from an individual learning passively because it has been observed that individuals learning to become

teachers are proactive, search for information, and learn in relation to their pedagogical goals (Rovegno, 1992).

However, it has been noted that some dance teachers essentially replicate previous teachers' behaviours (Dragon, 2015; Fortin, 1993), which suggests that their learning from previous teachers might have been passive. A possible explanation for this passivity is that novice teachers' experience of their previous teachers teaching could have promoted behavioural attractors (Zanone & Kelso, 1992), validating their dance teachers' knowledge and skills (i.e., dance teachers perceived their previous teachers' behaviours as effective). This validation of knowledge and skills may have occurred because the relationships established with previous dance teachers' behaviours were the strongest, or most probably the only functional relationships established from which new dance teachers could learn how to teach. Therefore, the knowledge and skills associated with experiences of previous dance teachers' behaviours might be perceived as pedagogically reliable and can be observed in dance teachers' behaviour (Fortin, 1993).

Another possible explanation in reference to dance teachers adopting previous dance teachers' behaviours, proposed by Stinson (2010), is that dance teachers might have difficulties questioning their pedagogical values and practices because it may be uncomfortable to envisage that their choices might not be correct or appropriate. Additionally, there may be a degree of uncertainty in selecting other possibilities; therefore, the tendency is for dance teachers to maintain pedagogical behaviours that are familiar and stable (Stinson, 2010; Warburton, 2008). However, a number of problems might arise from dance teachers relying in familiarity and stability. For instance, familiarity might lead to teachers merely replicating previous teaching behaviours which might be contextually unrealistic or inappropriate (Lakes, 2005) because they might not accommodate the current needs from particular cohorts of learners (Coe, 2003). Further detrimental consequences of maintaining teaching behaviours that are too stable, is that teachers might become deficient in adapting to change and variability (Cuban, 1984), which are properties of pedagogical environments and influence behaviour (Berliner, 1994a). Previous research from sport has identified that the capacity to adapt to change in complex environments is functional to the acquisition of expertise (Davids, et al., 2015; Seifert, et al., 2013). From this perspective, a certain degree of behavioural instability is beneficial to

acquire expertise because instability expresses a system's capability to respond to the task or environmental demands (Kelso, 2012). Moreover, behavioural instability facilitates coordinative adaptations that promote the creation of new behavioural pattern or the refinement of a previously acquired adaptive pattern (Kelso, 2012). The observed tendency for dance teachers to maintain behavioural patterns of replicating previous teachers' behaviours has suggested that individuals have not developed the capacity to address environmental changes, such as students' variability or student centred-approaches, in order to enhance pedagogic levels to new demands in the dance field (Stinson, 2010).

1.2 THE INFLUENCE OF DANCE TEACHERS' PREVIOUS EXPERIENCES AS EXPERT PERFORMERS

Another limitation to dance pedagogy is the tendency within the dance field to accept as dance teachers those whose pedagogical quality is based entirely on their performance experience and professional reputation (Warburton, 2008). Expert performers, as teachers, seem able to extrapolate performance abilities and skills to the field of teaching (Fortin & Siedentop, 1995); even though they might not consider, for instance, pedagogical foundations to dance teaching as essential (Baumol, Jeffri, & Throsby, 2004; Gilbert, 2005). Musil (2010) described an anecdotal case where an excellent dance performer was hired to teach a two-week course in a university dance program. The performer certainly exhibited a high level of dance skills; however, during teaching this performer did not demonstrate pedagogical knowledge in relation to progressions, sequencing, and anatomical knowledge, which eventually placed students at considerable physical risk. The performer's teaching focus was on exploiting athleticism, with little apparent attention given to the technical theory supporting the activity (Musil, 2010).

This anecdotal case suggests that expert performers might lack pedagogical foundations to support her or his teaching behaviour and it additionally suggests that her or his teaching qualifications might be based solely on her or his ability to execute high-level technical movements. It has been acknowledged that expert dance performers possess well-developed physical skills, which allow them to execute complex movement (Chua, 2013). This ability to execute and demonstrate movement has been suggested as being effective for dance teaching; nevertheless, this is so only

when it is coupled with other knowledge, such as motor learning theories and pedagogical content knowledge (Enghauser, 2003; Fortin, 1993).

Warburton (2008) agreed with these ideas by acknowledging that teaching dance is a complex task requiring more than physical skills, content knowledge, and careful planning. For example, it was revealed that during his personal journey as a professional dancer, Warburton eventually started to teach. In order to be prepared for teaching, he relied on his knowledge concerning his previous dance studio experiences, previous teachers, and knowledge of content. He then meticulously organised his lessons in a professional way, whereby each "dance combination and practically every word was accounted for" (p. 9) only to realise that his dance training was not a sufficient condition for effective teaching. According to him, he obstructed the advancement and enthusiasm of his students because he did not comprehend how to deliver a lesson or how to adapt it to diverse groups of individuals. Warburton realised that becoming an effective dance teacher required more than steps: it required an on-going development of pedagogical knowledge, for instance, of curricular design, lesson implementation, and assessment. Warburton's account suggests that the receptiveness within the dance field of the ability of expert performers to become dance teachers is a limitation to pedagogical effectiveness.

In relation to pedagogical effectiveness, Kassing and Jay (2003) argued that pedagogical foundations as well as other content knowledge are important for effective dance teaching and they suggested that content knowledge for dance teachers should be inclusive of: supportive knowledge, dance science, technique and choreography, teaching methods and management, education theories, psychosocial development, and artistic development. This suggests that the lack of content knowledge of expert dance performers is a limitation for dance teaching because a large number of professional dancers might become teachers of dance without possessing the required knowledge for doing so (Fortin, 1993; Gilbert, 2005; Musil, 2010; Risner, 2010a).

Another critical aspect influencing processes of teaching and learning in dance are the differences between performing artists and dance educators, which are expressed by the existence of hierarchies between individuals. Many researchers have addressed these differences as well as the hierarchical settings at play in reference to dance teaching (Fortin, 1998; Hagood, 2000; Kerr-Berry, 2007). Fortin

(1998), in reference to dance teaching in North America, asserted that at the highest teaching position in contemporary dance are teachers who are recognised performers who have mastered specific dance techniques (e.g., Graham, Cunningham, and/or Limon techniques) to the highest level. Their teaching practice is conducted in an individualistic manner, whereby they might direct a personalised warm-up then follow this by requiring students to follow their private movement sequences. However, the way they teach these movement sequences might not necessarily be assessed in relation to their teaching effectiveness, may be assessed on their ability to execute movement (Fortin, 1998). Additionally, Kerr-Berry (2007) addressed the differences between performance and teaching in general higher education settings, asserting that the highest teaching hierarchical ranking being given to best performers creates a barrier between the ranks of academic staff which ultimately affects dance students' education and preparation for the professional world.

The emphasis on performance, with expert performers becoming teachers, has been additionally acknowledged in higher education in the United States of America (USA) (Bond, 2010; Musil, 2010; Risner, 2010a) and in Australia (Card, 2006). Australia is considered a world leader in dance education, where dance is included in many primary and secondary schools, and tertiary institutions are central for the main training to professional dancers (Stock & Dyson, 2006). Additionally, according to Bond (2010) the USA system of dance education has been reported to be one of the most comprehensive in the world, and also includes a focus on performance. This focus is reflected in faculty staff whose work has an emphasis on performance and technique (Risner, 2010b). In the USA, the focus on performance within dance education settings began in the 1990s when dance teachers' education programs in higher education institutions favoured a superior level of technical content knowledge in contrast with an rudimentary level of pedagogical knowledge (Fortin, 1993; Kahlich, 1993).

Bond (2010) conducted a comprehensive study of graduate dance education courses in the USA, through analysis of internet-available information as well as of historical data, and concluded that at least one teaching course was, at that time, included in the large majority of graduate dance programs. Whilst this can be considered to represent significant progress in dance teacher education since the 1990s, it has been suggested that although significant progress has been observed in

graduate dance education, it might not be sufficient to address a number of current key challenges, such as: teacher preparation for all levels and contexts; specific attention for student diversity; multicultural perspectives; and, technological developments in curriculum design and practice (Bond, 2010).

Similar processes appear to have occurred within the Australian tertiary education context, where dance teachers' education has received less attention in favour of training individuals for dance performance and choreography (Card, 2006). Card (2006) reviewed the Australian dance sector and identified that major tertiary institutions in Australia follow the practices and philosophies of USA's educational trends towards choreography and performance. However, it has been argued that there is a disconnection between tertiary training and Australian dance industry needs; therefore, individuals need to acquire adaptive performance skills to be able to operate in the dance sector in Australia (Roche & Huddy, 2015).

Training individuals in the acquisition of adaptive performance skills involves re-examining current tertiary dance training practices at different levels (e.g., technical, pedagogical, and philosophical) (Parviainen, 2003) to understand how dance training can be enhanced (Roche & Huddy, 2015). Since expert performers mainly follow a 'conservatoire-style' dance teaching approach emphasising technique and steps (Fortin, 1998; Warburton, 2008), privileging dance performance and choreography over teaching in tertiary institutions might have negative consequences for tertiary dance training because expert performers, as teachers, might not be knowledgeable about pedagogical theory sustaining effective teaching (Fortin, 1993; Musil, 2010). The rationale above, addressing expert dance performers teaching effectiveness and preferences for performance over dance teachers' development in higher education institutions emphasises the need to investigate whether or not previous experience as an expert dance performer is critical in achieving pedagogical expertise in dance teaching.

In order to investigate observed educational gaps created by the replication of previous teachers' behaviours and by the tendency to accept expert performers' lack of pedagogical knowledge as teachers in dance teaching, research from sport has been reviewed which indicates that it would be helpful to conceptualise the study of expertise from the perspective of the ecological dynamics, constraints-led theoretical framework (Araújo et al., 2010; Davids, et al., 2015; Davids, et al., 2008). According

to this perspective, expertise emerges from the interaction between constraints during extensive task experience and practice (Phillips, Davids, Renshaw, & Portus, 2010); while behaviour is regulated by several task specific sources of information (Davids, et al., 2015).

In reference to teaching, task specific sources of information that influence learners' performance are, for example, instruction and feedback because verbal information provided by a teacher can improve or detract learner's performance, depending on how it is utilised (Chow, Davids, Button, & Renshaw, 2015). As a result, teachers should be aware of the effect of their verbalisations on learners (Chow, et al., 2015). This research suggests, therefore, that it is important to understand how informational constraints might link the environment with the individual (Chow, et al., 2015; Davids, et al., 2008). In dance, Torrents and colleagues used the constraints-led approach to study creativity, choreography, and teacher instructions (Torrents & Castañer, 2009; Torrents, Castaner, Dinušová, & Anguera, 2008; Torrents, Castañer, Dinušová, & Anguera, 2013; Torrents, Ric, & Hristovski, 2015); however, no studies could be identified that attempted to investigate the pedagogical development of expert teachers from a constraints-led approach.

The rationale supporting the study of expert teachers includes their capability to generate effective teaching output due to their rich knowledge about critical aspects of teaching, such as: the learning environment, subject matter, and learners' abilities (Berliner, 1994a). For instance, an implication of studying expert teachers is that they can provide important information concerning their exceptional performance that can be analysed by beginner teachers to substantiate their education (Berliner, 1986). The study of teachers' expertise facilitates an understanding of how knowledge and skills can be acquired as well as of how non-expert teachers may become expert, or, in other words, it "is a matter of learning how to learn the kinds of things that will lead to expertise" (Bereiter & Scardamalia, 1986, p. 11).

Previous research has shown that pedagogical expertise is domain and context specific (Berliner, 2001, 2004; Bullough & Baughman, 1995), which means that teachers cannot become experts in isolation from the environment in which they teach. This implies that practice and context are important in the development of expertise at teaching (Berliner, 2001); therefore, it is important to understand how

specific constraints in specific contexts might be functional in shaping individuals' behaviour during practice in their progress towards the acquisition of expertise (Araújo, Davids, & Hristovski, 2006; Davids, et al., 2015). For this reason, the research focus of this study is contextually specific to the investigation of the development of pedagogical expertise of ballet and contemporary teachers, male and female, from a specific tertiary education institution in Australia. The general aim of this program of research is to study the role of environmental, task, and individual constraints on the acquisition of pedagogical expertise in dance. It utilises the constraints-led approach, within the larger scale of the ecological dynamics theoretical framework, to examine expert dance teachers' pathway to pedagogical expertise as complex, interactive, and influenced from environmental sources of perceptual information.

This thesis is organised in a traditional format with theoretical and experimental chapters structured in relation to the flow of ideas emerging during the PhD program. All chapters were written sequentially, connecting the previous with the following, in order to maintain the flow of ideas, findings, and conclusions.

Chapter 2: Literature Review

2.1 THE ECOLOGICAL DYNAMICS THEORETICAL FRAMEWORK

The coupling of ecological psychology with dynamical systems theory has been referred to as the ecological dynamics theoretical framework and it implies an approach to understand behaviour by using dynamical systems tools on an ecological scale (Araújo, et al., 2006; Seifert & Davids, 2015). Ecological psychology and dynamical systems theory reject cognitive psychology's theoretical explanation of human behaviour by employing cognitive constructs, such as mental representations and motor programs (Beek, Jacobs, Daffertshofer, & Huys, 2003); in contrast, ecological psychology and dynamical systems theory explain human behaviour by focusing on the informational exchange that emerges from the continuous interaction between the individual and the environment (Seifert & Davids, 2015).

2.1.1 Ecological Psychology

Ecological psychology emphasises the mutual interaction between the individual and the environment (Gibson, 1986). According to Gibson (1986) the mutuality between the individual and the environment is emergent from the coupling between mechanisms of perception and action regulated by specific information generated by individuals' actions in specific environments. Perception and action are inter-dependent and cyclical - by perceiving environmental information an individual acts; and by acting, an individual perceives further information (Gibson, 1986). Critical to this understanding is the idea that action modifies the type of information picked up by the individual; therefore, it emphasises self-organizational capabilities that have origin in the individual-environment dyad, which permit individual coordination and behaviour control to emerge (Gibson, 1986). It is important to consider the coupling between perception and action because it provides a foundation for explaining behavior in specific environments while an individual is trying to achieve a specific goal.

According to Gibson's (1986) theory of perception and action, contextual information is what fosters a dynamical relationship between the individual and the environment, as it is during an individual's exploratory actions in a specific

environment that affordances relevant to goal achievement are perceived. The term *affordances* was created by Gibson and can be observed in the following quotation:

> The *affordances* of the environment are what it *offers* the animal, what it *provides* or *furnishes*, either for good or ill. The verb to *afford* is found in the dictionary, but the noun *affordance* is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementary of the animal and the environment. (Gibson, 1986, p. 127)

The above quotation asserts that affordances refer to "both the environment and the animal" and that they imply a complementary relationship between the two. In this sense, affordances have been described as opportunities for action (Araújo, et al., 2006; Fajen, Riley, & Turvey, 2008; Michaels, 2003; Stoffregen, 2003) because they emphasise a functionalist approach to understanding human behaviour whereby, for instance, a dance teacher can be thought of as perceiving and acting on other individuals (e.g., mentors, peers, students), settings (e.g., dance schools, universities, dance companies), and events (e.g., dance class) in the environment. The environment is perceived in relation to functionalities that the dance teacher matches with her or his action capabilities; therefore, there is a degree of fit between environmental properties and the dance teacher's capabilities for action.

A dance teacher's environment could be characterised by specific physical, social, cultural, and academic features which might constrain and afford specific pedagogic behavioural patterns and the ways in which he or she might acquire knowledge and skills (Chappell, 2007b; Stinson, 2010). Rietveld and Kiverstein (2014) argued that the affordances that an environment offer to individuals are dependent on the skills that individuals possesses as well as on their form of life. They further argued that the term 'form of life' refers to the stable and regular patterns of behaviour of an individual in a particular context, which might be constructed during social and cultural practices involving many other individuals (Rietveld & Kiverstein, 2014). A form of life is socio-culturally constrained in a way that the skills that individuals acquire through participation in skilled practices, are those skills needed to act in accordance with the norms of a specific practice (Rietveld & Kiverstein, 2014). The normativity of affordances relates to how an

individual acquires skills by engaging with particular aspects of a specific environment, while being guided by more experienced individuals.

Zeller's (2009) account of the pedagogical development of Maggie Black, a renowned ballet teacher and coach, is provided as an example to illustrate the normativity of affordances. Black's pedagogical approach shared similarities with that of her previous and more experienced dance teacher, Audrey de Vos (1900-1983). To illustrate, the system of teaching used by Black's previous teacher emphasised central alignment, use of weight in heels, individualised instruction, accepting dancers of non-ideal physique, having classes with a two-hour time frame, and avoiding repetition (Zeller, 2009). All of these characteristics of Audrey de Vos's dance teaching practice could similarly be identified in Black's pedagogical approach, which suggests that Audrey de Vos's pedagogical behaviour was instrumental to Black's perception of which particular aspects of the pedagogical environment (i.e., affordances) could be important to engage with in order to become an effective ballet teacher.

Rietveld (2008) argued that the concept of normativity relevant to a skilled individual's interaction with affordances depends on the individual's capability to differentiate appropriate from inappropriate, superior from inferior, ideal from worst, or suitable from unsuitable actions in specific environments. This type of normativity is referred to as situated normativity and can be comprehended "as the normative aspects of embodied cognition in unreflective skilful action" (Rietveld, 2008, p. 973) because it is the specific circumstances that validates an individual's action inadequate or adequate. In a following paper, Rietveld and Kiverstein (2014) stated that the acquisition of skill is accomplished in socio-cultural environments and that to some extent there is agreement in what the members of a particular socio-cultural practice do; however, they additionally stated that the patterns of behaviour depend on an individual's continuous adjustments to the affordances of specific and concrete material settings.

The adequacy of behaviour expressed by Rietveld and Kiverstein (2014) can be observed in the previous example of pedagogical development of Maggie Black because, although Black's pedagogical form of life incorporated specific properties acquired from her previous teacher, the way she acted on individuals was different from her previous teacher's approach. For instance, Audrey de Vos and Black shared

an emphasis on central alignment; however, Audrey de Vos's focus was specifically through the muscles of the inner thigh, whereas Black focused on the vertical placement of the body as a whole (Zeller, 2009). This suggests that, although there may be a certain degree of behavioural agreement acquired through socio-cultural practice from previous teachers, as a dance teacher matures, she or he develops patterns of behaviour in relation to the affordances of his or her specific material settings.

Conceiving affordances as a landscape of affordances is relevant to the study of pedagogical expertise in dance since it has been suggested that pedagogical values and practices in dance are passed down as a legacy, from generation to generation, and between individuals (Hagood, 2008b). According to Hagood (2008b), other forms of preserving ideas and pedagogies (e.g., books and media) cannot truly capture the rationale behind pedagogical practices because these practices are shaped by values that individuals determine are important for them. Passing down pedagogical values and practices as a legacy relates to the idea of situated normativity (Rietveld, 2008), which includes what members of a socio-cultural practice (e.g., ballet teachers) do and consider effective or ineffective, important or unimportant.

Legacy in ballet teachers' education can be observed in practices that might be widely accepted, such as the idea that ballet dancers need to know and be able to execute all the accepted classical movement techniques (Johnson, 2011; Krasnow & Wilmerding, 2015). However, the values conveyed during teaching might reveal the teacher's personal nature in a way that reflects the values and practices of a significant other, such as illustrated on the previous example of the pedagogical influence of Audrey de Vos on Maggie Black's pedagogical development (Zeller, 2009). Furthermore, as suggested by Hagood (2008a), in some cases a dance teacher might edit and evolve the output of her legacy; however, in other cases, one might simply replicate values and behaviours and remain largely unaware of the influences that shaped one's form of life.

The above example, from Maggie Black, suggests that an individual's expertise is reliant on a specific form of life and exemplifies how individuals learn and develop their skills by becoming attuned to critical environmental sources of information (Araújo, et al., 2006). During skill acquisition, individuals learn in which

places in the environment they should find the affordances relevant to achieving a specific goal (Araújo & Davids, 2011). Through time, the physics and the assembly of the environment, together with the individual's perceptual, cognitive, and physical capabilities, and specific task problems, altogether assist in constraining skill acquisition (Warren, 2006).

Another important concept that influences behaviour in ecological psychology refers to knowledge and its acquisition. Gibson (1966) explained that an individual's behaviour is influenced by two distinct knowledge constructs: *knowledge about and of the environment*. *Knowledge about* the environment includes indirect perception, through symbols, pictures, and language, which facilitate analogical reasoning about the meaning of information. *Knowledge of* the environment includes individuals' direct perception of environmental properties in relation to their bodies and action capabilities. Because *knowledge of* the environment involves perception of invariants, which an individual uses to control action directly, it facilitates knowing how to complete an action (Gibson, 1966).

Exploratory action enables the individual's perceptive structures to come to be gradually attuned to environmental invariants in particular settings. Contextual task experience enriches the information picked up by the individual so that it becomes more elaborate and accurate than it would otherwise be. The individual then, through processes of direct learning, couples this information with actions (Jacobs & Michaels, 2007). The process of direct learning (Jacobs & Michaels, 2007) exemplifies how expert performance emerges from the progressive, functional fit between the individual and the environment, in other words, the development of expert performance is dependent on individuals' increasing attunement to affordances, which they use to regulate behaviour (Seifert, et al., 2013).

The acquisition of skill by an inexperienced individual involves what Gibson called the *education of attention*, which represents the process of learning to attend to relevant variables useful to achieve a specific goal, while ignoring less relevant variables (Gibson, 1986). In relation to legacy in dance, the ecologically understood process of educating attention seems to involve previous teachers or mentors who selectively introduce the novice/apprentice to important variables, such as theoretical knowledge, choreographic skills, and movement expressive capacities aimed at skill development (Hagood, 2008b). Some individuals may fully comply with and adopt

those behaviours (Hagood, 2008b), while others may adopt only particular behaviours. However, what may influence these inter-individual differences in adopting particular behaviours while excluding others is not well understood in relation to the acquisition of pedagogical expertise; therefore, it requires further examination. This highlights the need for an ecological perspective to the study of pedagogical expertise because from this perspective the development of skilled behaviour is connected with an individual's engagement with affordances, it is by adequately adapting to specific environmental demands that the individual becomes increasingly expert (Davids, et al., 2015).

2.1.2 Dynamical systems theory

Dynamical systems theory refers to a subdivision of mathematics that investigates properties of dynamic systems by utilising several numerical, analytical, geometrical and topological methods for studying iterated mappings and differential equations (For a review see Aubin & Dalmedico, 2002; Holmes, 2007). Instruments from dynamical systems have been used to investigate coaching of team sports (Gréhaigne & Godbout, 2014), competitive sports (McGarry, Anderson, Wallace, Hughes, & Franks, 2002), self-organisation of brain and behaviour (Kelso, 1995), coordination of movement in sport (Davids, Bennett, & Button, 2003), sport performance and training (Davids et al., 2014) and skill acquisition (Newell, 1996). In dance, dynamical systems theory has been used to investigate, for example, teaching alignment (Batson, 2008) and creativity and emergence of specific dance movements by manipulating instructional constraints (Torrents, Ric, et al., 2015). Dynamical systems theory considers humans as a whole, although they are composed of distinct parts that connect with each other (Araújo, et al., 2006). Changes to one part might influence other parts; therefore, it is important to understand how each part is unified and can affect other parts (Davids, et al., 2008). Dynamical systems theory explains how the individual is capable of exploring the environment in order to develop functional patterns while achieving a specific goal (Davids, et al., 2008). Key features of dynamical systems theory include nonlinear behaviour, characterised by stable and unstable patterns; the potential for subsystems to influence other subsystems; multiple and varied degrees of freedom; and, several levels of existence (Kauffman, 1993).

Complex behaviour, such as teaching behaviour (Berliner, 2001; Shulman & Shulman, 2004), can be explained by the emergence of stable and unstable patterns of behaviour evolving from on-going interaction in specific environments. Bullough and Baughman (1995) reported a longitudinal case study where an expert high school teacher moved from her usual teaching environment to a new teaching environment. According to Bullough and Baughman (1995), this teacher was considered an expert in her previous school, as she demonstrated many of the qualities associated with the research on pedagogical expertise (Berliner, 1988), such as having purposeful lessons, handling unexpected events and transitions in class with confidence, and exhibiting an effortless and fluid pedagogical behaviour (see Bullough & Baughman, 1993). However, when this teacher moved to another school she was exposed to new and different contextual features, such as physical environment, formal curriculum, teacher culture, and organisational philosophy. These differences posed three main problems, and a number of other problems associated with each one that challenged the teacher's expertise.

The first problem was centred on providing an appropriate curriculum for students who were significantly different from her previous students; the second problem involved the inadequacy of maintaining the teaching behavioural patterns developed over five years in her previous school; and the third problem involved planning for an interdisciplinary learning program to be conducted by a four-person team (Bullough & Baughman, 1995). The most challenging problem for the expert teacher was getting to know the student population, which was significantly more diverse than the student population at her previous school. This student diversity created class management problems, as she was no longer capable of dealing confidently with unexpected events in class. The expert teacher had to explore the environment, looking for information concerning the student population and the school organisation which could facilitate the creation of new functional teaching solutions.

Additionally, her teaching methodology and the associated knowledge she had acquired at her previous school, were inadequate for addressing the challenges of the new school. She no longer felt or performed as an expert as she had to develop new skills to meet the new challenges (Bullough & Baughman, 1995). Nevertheless, with time, she did, and started to feel more comfortable during teaching. Bullough and

Baughman's (1995) case study illustrates how pedagogical expertise is contextual and characterised by the existence of stable and unstable patterns of teaching behaviour as an individual acquires new knowledge and teaching skills to address challenges in specific environments. Furthermore, it exemplifies how subsystems, for instance an individual's knowledge of curriculum and planning skills, influence several other subsystems, such as the four-person team. In this sense, Bullough and Baughman's (1995) study emphasises the need for studying pedagogical behaviour as a complex system, with all parts interacting with each other within specific environments.

The analysis of the developmental pathway of expert dance teachers within the ecological dynamics theoretical framework can add new knowledge to the field of dance, because the value of this approach resides in the functional interdependency between the individual and the environment to explain the emergence of behaviour (Araújo, Davids, Bennett, Button, & Chapman, 2004). Moreover, the criticality of the ecological dynamics theoretical framework to the context of expertise acquisition in movement domains alludes to a more realistic context of application because it connects the individual, the environment and the task in an equitable triad (Davids & Araújo, 2010).

In contrast, studying each part separately is considered reductive because critical interaction between parts affecting behaviour is not being measured (Edelman & Gally, 2001). Edelman and Gally (2001) highlighted the importance of analysing the influence of interacting constraints in the emergence of rich patterns of behaviour in dynamic performance contexts. Describing rich patterns of behaviour includes considering many levels of activity and systems degrees of freedom (Bernstein, 1967), which are expressive of the emergence of stable functional behaviours in specific performance environments (Davids, et al., 2008). Because dynamical systems theory considers the influence of constraints on an individual's behaviour, this theoretical framework is capable of explaining how an individual is able to satisfy unique constraints imposed on her or him while immersed in dynamic performance environments (Davids, Araújo, Shuttleworth, & Button, 2003).

2.1.3 The Constraints-led Approach

The acquisition of knowledge is a process that involves learners' activities within specific environments (Araújo, Davids, Cordovil, Ribeiro, & Fernandes,

2009); thus, it is dynamical and contextual in nature (Barab & Kirshner, 2001). The learning process can be mediated by manipulating key constraints potentially acting on individuals throughout their search for appropriate task solutions (Davids, Button, & Bennett, 1999). Individuals perceive key information from these constraints, which operates as system control parameters, in order to regulate their action during goal directed behaviour (Davids, et al., 1999). A thorough investigation of expertise includes the identification of the intrinsic dynamics of individuals, where intrinsic dynamics refers to the individual's favoured behavioural predispositions that emerge from the interaction of environmental, task, and individual constraints (Kelso, 1991); and the constraints that shape their behaviour (Phillips, et al., 2010).

Additionally, previous research on pedagogical expertise has suggested that expertise is domain and context specific (Berliner, 2001), which suggests that the examination of pedagogical expertise should be conducted in specific environments and with specific individuals in order to understand how constraints influence individuals' behaviour. For instance, Cairns (2010) studied expert ballet teachers in New Zealand and identified geographical barriers, family, previous teachers, and personal preferences for specific ballet styles as being influential on behaviour. In another study on the pedagogical expertise of a junior high school teacher of reading, social studies and English, based in the USA, Bullough and Baughman (1995) identified student population, organisational philosophy, and curriculum as being influential on a teacher's behaviour. The specificity of influences identified in the studies of both Cairns (2010) and Bullough and Baughman (1995) suggest that particular environments have specific constraints influencing behaviour; therefore, they justify the adoption of the constraints-led approach to study dance teachers' pedagogical development. A model of the interaction of constraints' categories, from where goal-directed behaviour emerges is shown in Figure 2.1.

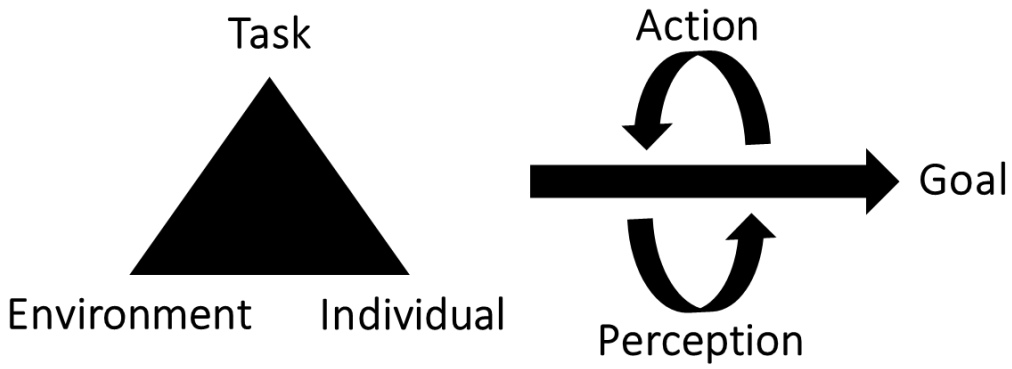

Figure 2.1. The interaction of constraints' categories, from where goal-directed behaviour emerges. Adapted from Newell and McDonald (1994).

Constraints that bind the dynamics of learning and performance can be classified as environmental, task, and individual (Newell, 1986). Constraints interact with each other in setting different boundaries, which can shape an individual's perceptual-motor landscape within different time and space situations (Newell, 1996). Conceiving constraints as boundaries shaping individuals' behaviour, implies that the individual uniquely interacts with constraints (Renshaw, Davids, Shuttleworth, & Chow, 2009). The perceptual-motor landscape of the learner is composed of an imaginary action space with origin in an individual's perception of properties of ambient energy arrays, which potentiates several movement solutions (Chow, Davids, Hristovski, Araújo, & Passos, 2011). This variability in movement solutions is correlated to learning and is represented as being specific to change (Jacobs & Michaels, 2007).

Studies from sport have illustrated that expertise emerges from the interaction of ecological constraints during practice (Araújo, et al., 2010; Phillips, et al., 2010); therefore, while explaining each constraint separately might be functional in providing a better structure for understanding the role of each constraint, constraints need to be understood as interactive and as a united whole because it is throughout the interaction of constraints that individuals' adaptive behaviour emerge (Araújo, et al., 2004; Davids, Araújo, Button, & Renshaw, 2007; Kelso, 1991).

Environmental Constraints

Environmental constraints can be social, cultural or physical. Physical constraints include gravity, temperature, light, humidity, and infrastructure such as surface and building height, for example, the type of floor where a dance teaching

activity occurs can be considered a physical constraint for teaching. Social constraints can be family or peer groups, whilst cultural constraints could include contextual dance related values, such as ethnological clothing utilised during performance (Kealiinohomoku, 1979), or specific dance genres, such as ballet or contemporary.

In a tertiary education institution in Australia, for instance, the globalisation phenomenon has acted as an environmental constraint forcing changes in organisational and pedagogical processes in dance in order to address specific real world demands (Stock, 2004). Specific learning environments have now been created to facilitate students' learning in relation to technological, cultural, and interdisciplinary practices required in the real world (Stock, 2004). The globalisation phenomenon additionally impacted on the university dance teachers' pedagogical development, as they now needed ongoing training to address technological, cultural, and interdisciplinary demands during teaching. This meant the coupling of the traditional dance teacher centred approach with the student centred approach, collaborating with performance psychologists, and introducing new teaching strategies, such as the 'buddy system', whereby each student in a dance class gives constructive feedback to another student and vice versa (Stock, 2004).

Although traditional training methods involving embodied and repetitive training supported by direct transmission of information from teacher to student was not the main pedagogical strategy following university globalisation, traditional methods were still utilised; however, mixed with new pedagogical approaches, such as teaching somatic techniques. Since it was reported that dance teachers needed further pedagogical training to respond effectively to these organisational demands (Stock, 2004), it can be asserted that globalisation impacted on the university's organisational processes and additionally on university dance teachers. This exemplifies how environmental constraints (i.e., globalisation and university responses to globalisation) interacting with individual constraints (i.e., individuals' preferences for teacher or student centred approaches) shaped dance teachers' pedagogical development. In this example, however, it was claimed that it took three years to find a suitable combination of traditional and new pedagogical approaches to produce positive outcomes (Stock, 2004). Although details about the process were

not provided, the time length of three years suggests that finding a suitable solution was not immediate nor necessarily easy.

Another example of environmental constraints influencing dance teachers' development is illustrated by examining Morris' (2003) study focused on ballet: steps, style, and training. Morris has argued that standard ballet training has been teacher led, with the student a passive learner. Ballet teachers' practices have always been influenced by traditional ballet cultural values, which have determined ballet's movement vocabulary and training; however, the ballet teachers' practices resulted in creativity losses in both dance performance and the making of dances (Morris, 2003). Morris has further claimed that "all training systems produce dancers with a particular way of articulating ballet's codified movements" and that there has been a lack of acknowledgement of the influence of these training systems on dancers from ballet teachers and school directors (Morris, 2003, p. 18). According to Morris, ballet teachers and school directors did not acknowledge the influence of different training systems on dancers because, if they did, it would mean that the ballet technical exercises were "open to personal interpretation and subject to changing cultural and aesthetic values" (Morris, 2003, p. 19), which is not tolerated in ballet training manuals (Glasstone, 2001; Vaganova, 1969). These manuals enforce impersonal prescriptions and rules for executing ballet's codified steps appropriately because, as argued by John White who taught the Vaganova method (a classical ballet teaching method with a specific syllabus - see Vaganova, 1969): "Rules are the foundation upon which to build a reliable technique" (White, 2009, p. 32). As argued by Morris, many ballet teachers have in the past aligned their teaching and training processes to meet cultural, aesthetic, and technical requirements which conform to a vocabulary of movement established by traditional ballet. Ballet teachers' preference was given to codified movement, which would invariably be perpetuated at the professional level by the students taught under this regime, when they became teachers themselves (Buckroyd, 2001; Morris, 2003).

Furthermore, practices of ballet teachers have largely been sustained by the needs of professional dance companies which demand that dancers be capable of responding to the technical requirements of rigorous ballet technique; as a consequence, ballet teachers have traditionally imparted their teaching, aiming at "...the acquisition of flamboyant skills, and the mechanics of executing codified

technical movements." (Morris, 2003, p. 18). The above example is expressive of how environmental constraints (i.e., industry demands for ballet dancers who can exhibit correct technical skill, and ballet's traditional culture and aesthetic requirements) interacted with task constraints (i.e., ballet's technical requirements and training systems) shaping specific behaviours of ballet teachers.

A third example illustrating how constraints operate on the development of performance and pedagogical expertise in dance is provided by examining past cultural events in Russia. In Russia during the 18th and 19th centuries, cultural and financial support provided by the czars was noticed to stimulate the development of classical ballet (Kassing, 2007). In order to provide entertainment for the Russian nobility, many ballet performances were created, which led to the expansion of ballet technique into a theatrical form of art and to the publication of social dance instruction books (Kassing, 2007). From a constraints-led perspective, the cultural and financial support provided by the Russian czars acted as a constraint because as a result, Russia has produced larger numbers of expert ballet dancers and teachers, than most other countries (Fetisova, 1991; Kassing, 2007).

Subsequently, these teachers travelled to other countries, such as China, creating ballet companies and schools (Koegler, 1987). This migration of Russian teachers supported ballet development in China and later culminated in the production of a number of expert ballet dancers and teachers there, though due to political constraints, these facts have been mostly unknown to the world (Wulff, 2008). The above mentioned events support the idea that constraints, such as geography, culture, finances, and socialization, have interacted and played a critical role in the development of ballet, which led to the development of ballet teachers' expertise.

Task Constraints

'Task constraints' relate to the goal of the task (Davids, et al., 2008) and include rules (e.g., classical ballet aesthetic rules), instructions, and equipment used (e.g., dance shoes). The information about the task that learners perceive is meaningful because it is typically used to support decision making, planning, and movement organisation (Davids, Chow, & Shuttleworth, 2005); therefore, task constraints have a strong influence on learners' intents, and are amongst the most

simple factors to control or implement within a learning setting (Davids, Chow, et al., 2005).

A common feature of teachers' development is their exploration of different dance genres (Gilbert, 2005), each genre possessing different task rules (Craine & Mackrell, 2010). Previous research has suggested that different task rules in genres such as ballet, contemporary, and modern dance significantly influence dance teachers' performance (Dyer, 2009). This implies that rules could be considered as an example of a task constraint with the potential to shape teachers' pedagogical development. For instance, ballet has codified movement and is generally considered to be more structured than contemporary (Craine & Mackrell, 2010). The different modes of structuring movement have different implications for ballet (Foster, 2010) and contemporary task organisation (Erkert, 2003). Relevant to this discussion are suggestions that pedagogical acquisition in ballet is attributed to persistence in preserving codified movement vocabularies (Birk, 2009; Morris, 2003), whereas in contemporary pedagogical acquisition is associated with using a variety of movement vocabularies (Foster, 1997). These differences concerning task organisation, suggest that dance teachers' pedagogical acquisition might be influenced by each different genre.

Fortin and colleagues (2002), investigating the teaching of dance, acknowledged that contemporary dance teachers may acquire teaching practices from diverse influences, such as teachers, choreographers, and dance techniques. Each contemporary dance technique incorporates specific rules which are conveyed by the choreographer or the teacher and impact specifically on the learner (Foster, 1997). Choreographers or teachers have, therefore, a certain degree of authority in constructing the learner's dancing body (Fortin, et al., 2002). Fortin and colleagues challenged this authoritarian relationship of the teacher over the learner by exploring a somatic approach for teaching, specifically the Feldenkrais method®. It was argued by Fortin and colleagues (2002) that some somatic techniques might be taught from a first person view point, while others might be taught from a third person view point.

The third person view point can usually be observed in the "goal oriented environment of professional dance schools", whereas the first person viewpoint is a somatic process oriented towards "the experiential soma (how the body feels from a first person viewpoint)" (Fortin, et al., 2002, p. 172). It should be noted, however,

that some approaches usually regarded as being focused on individual sensory experiences, such as the body-mind centering or Bartenieff fundamentals, can focus on precise exercises or steps where students are directed to execute and reproduce the ideal movement exactly. These somatic approaches are taught from a third person view point perspective, which can then become an authoritarian approach (Dragon, 2015). A key difference between first and third person view point is that importance is given to demonstration in dance classes during third person view point approaches (Fortin, et al., 2002), while in first person view approaches, such as the Feldenkrais method®, demonstration is avoided to allow for learners' sensitive exploration (Buchanan & Ulrich, 2001; Feldenkrais, 1972).

It was noted by Fortin and colleagues (2002) that experiences focused on the individual's self-discovery from a first person view point were most beneficial for individual learning because the body is perceived directly. This was justified by empirical evidence from Fortin's and colleagues study that showed that from a first person view point, the Feldenkrais method® facilitated the individual's self-discovery, enhance body awareness, and validate the experience. Validation is accomplished by promoting a real interaction between the self and the environment, so that the individual can learn from experiencing his or her own actions (Fortin, et al., 2002).

The implication of Fortin's study for dance teachers' development is that it is not only one type of task exploration, from a third person view point, that can construct a teacher's pedagogical knowledge and skills: how the teacher approaches her/his task exploration from a sensitive first person view point is additionally considered beneficial because it facilitates the investigation of both individual and environmental information that otherwise would not be perceived. Fortin's study, therefore, highlights the exploration of the Feldenkrais method® by teachers, where teachers and students mutually generate the circumstances in which knowledge is shaped and acquired. Furthermore, by highlighting the interaction between the dance teacher and the students from a first person view point, it illustrates how dance teachers can manipulate task constraints (i.e., the Feldenkrais method® somatic approach in reference to teaching and learning processes), facilitating the construction of the students' dancing body as well as the development of a more accurate sense of the students' environment (Fortin, et al., 2002).

Fortin and colleagues' (2002) has important implications to dance teachers in higher education since it was recently acknowledged that the field of somatic education is divided in two different teaching approaches (Dragon, 2015). These divisions in the field of somatic approaches are similar to divisions in teaching approaches in higher education. For example, dance teachers from USA's higher education sector appear to adopt a practice division: those who conceived dance as education adopted a teaching approach focused on the student and those who conceived dance as art performance adopted a teaching approach focused on the teacher. Similarly, some somatic teachers have an emphasis on the basic principles that created the method, while other have an emphasis on the techniques from specific somatic methods (Dragon, 2015).

The implications are that those who have a focus on somatic principles generate learning cultures that facilitate enquiry and organisation of experiences according to individual's unique ways of perceiving the environment, while those who focus on techniques generate learning cultures that restrain individuality because a technique's based approach relies on "imitation repetition, and obedience to the practitioner's expertise in applying the technique" (Dragon, 2015, p. 30). In other words, as Johnson (1986-1987) argued, a focus on somatic technique generates a group of masters and disciples and, whereas a focus on somatic principles generates groups of explorers. Dragon's (2015) study is illustrative of how individual's constraints in higher education (i.e., teachers personal preferences for student or teacher's approaches) and in the field of somatic approaches (teachers' preferences for principles or techniques) interacting with task constraints (i.e., the focus on somatic techniques versus the focus on somatic principles) can produce different learning outputs. Together, Dragon (2015) and Fortin's (2002) papers exemplify and give support to how dance teachers can manipulate task constraints in order to achieve specific learning goals.

In dance, few studies have utilised the constraints-led approach as a method to study and explore individuals' behaviour and pedagogy. Nonetheless, a few exceptions could be identified in the literature in relation to the exploration of task constraints in the development of creativity (Torrents, Castañer, Dinusová, & Anguera, 2008), arts teachers' conceptions of creativity (Torrents, Casals, &

Castañer, 2015), teacher instructions (Torrents, Castañer, Dinušová, et al., 2013), and choreographic creation (Torrents & Castañer, 2009).

Torrents and colleagues (2011), explored the role of task constraints and their effect on complex motor behaviour in dance by manipulating specific constraints (e.g., motor skills, interaction between partners, space, and time) and observing their influence on body movement and dance practices. Participants were required to improvise a dance in a confined space (i.e., 8x8m), and they received no specific instruction on how to interact, synchronize or be aware of other dancers; this study was structured across four different trials, and in each trial different constraints were manipulated (Torrents, et al., 2011). The authors observed that manipulation of task constraints exposed changes in the synchronisation and interaction of dancers: for example, breathing synchronisation among dancers prior to dancing promoted more physical interaction between participants than otherwise and harmonised their rhythms. These results suggest that the manipulation of task constraints is a suitable pedagogical technique for teachers to utilise in order to promote the emergence of rich and diverse patterns of movement.

In another study, Torrents and colleagues (2013) analysed which type of instructions–metaphoric, descriptive, or with model–would create divergent motor action when teachers aimed at creativity development in their dancers. In the use of metaphoric instruction, the teacher supports and guides students' problem-solving capacities by posing questions using metaphoric concepts; for instance, the teacher might ask students to move like oil. In descriptive instruction, the teacher supports and guides learners' independent problem-solving capacities by asking questions using physical education and dance terminology–for instance, to move the arm in the sagittal plane. Finally, during instruction with a kinetic model, the teacher supports students' learning through particular motor and visual demonstrations. However, it is not proposed that during task execution students should follow the kinetic model exactly, the motor and visual demonstrations serve only as an example (Torrents, Castañer, Dinušová, et al., 2013).

Participants in the Torrents and colleagues (2013) study were 120 higher education students from the degree course in sport and physical activity sciences at Lleida University in Spain, from this cohort, however, only 12 participants, who attended all sessions of the degree course and had no prior experience in dance, were

selected. Observations occurred during 24 sessions of body expression, a unit based on improvisation, mime dance, and creative dance. Findings indicated that the three types of instruction (metaphoric, descriptive, and kinetic) can aid students in developing motor creativity; however, it was found that the descriptive and metaphoric approaches were superior in developing self-expression and creativity (Torrents, Castañer, Dinušová, et al., 2013). Furthermore, it was also found that descriptive instructions may generate higher response variation, even if in some cases they can be more confusing than the metaphoric or the kinetic model instructions (Torrents, Castañer, Dinušová, et al., 2013). It was therefore suggested that the kinetic model and metaphoric instructions could be more appropriate for beginners, while "expert dancers could respond more divergently using descriptive instructions" (Torrents, Castañer, Dinušová, et al., 2013, p. 115). Finally, it was suggested that teachers should consider their influences on learners' responses when they offer a kinetic model as a teaching/learning strategy, because it constrains learners' production of motor responses (Torrents, Castañer, Dinušová, et al., 2013).

The study by Torrents and colleagues (2013) provided practical evidence and theoretical support for the claim that manipulating different modes of instruction can produce a range of motor responses and different learning outputs, which emphasises that the implementation of the constraints-led approach is an effective teaching strategy in the development of individuals' skill, creativity, and learning. Their study has important implications since it has been suggested that the choreographic landscape of the 21st century requires greater versatility amongst dance performers, in professional dance companies and in universities (Roche & Huddy, 2015).

Roche and Huddy (2015, p. 145), suggested that somatic techniques could be utilised to facilitate the development of versatile dancers in higher education because they could help students to make the "transition from private dance studio training into the pre-professional arena". However, it was also pointed out that not all teachers, for instance in ballet, may be proficient in the use of somatic techniques (Johnson, 2011). Therefore, an important implication from the study by Torrents and colleagues (2013) is that ballet teachers could manipulate task constraints as an alternative to the utilisation of somatic techniques to develop creative and versatile dancers. Furthermore, this way, ballet teachers could teach for versatility without

compromising ballets' traditional teaching values embedded in specific methods (e.g., Vaganova's (1969) structure, vocabulary, and progression of a ballet class).

The metaphoric, descriptive, and kinetic models of instructions (Torrents, Castañer, Dinušová, et al., 2013) could be used to encourage learners' development with regards to each individual's choices, rather than the their development being codetermined by ballet movement ideals, with origin in mimicked learning, where the individual's movement patterns are not natural and efficient (Weber, 2009). As argued by Weber (2009), the traditional style of ballet training which is based on movement replication aiming at an ideal, leaves the individual with no way of changing the set behavioural patterns. Both studies (Torrents, et al., 2011; Torrents, Castañer, Dinušová, et al., 2013), exemplify how task and individual constraints interact, and suggest how the constraints-led approach may be used as an effective strategy in order to address creativity problems generated by traditional teaching methods in ballet (Johnson, 2011; Morris, 2003) and to develop ballet dancers' versatility without compromising ballet teachers' traditional values.

Individual Constraints

Individual constraints refer to the unique, physical, cognitive, physiological, and emotional characteristics that can affect coordination and movement in learning and performance (Newell, 1986). Weight, height, body morphology, genes, physical, and technical abilities as well as psychological characteristics such as cognition, motivation, and emotions form the repertoire of individual constraints. It is important to understand individual constraints because they can shape the way different individuals behave during performance (Davids, Chow, et al., 2005).

Lakes (2005) reported individual constraints, such as the psychological state of narcissism and the lack of self-definition as a dance teacher, influencing the authoritarian pedagogical legacy in western concert dance technique training and rehearsals. This study examined the legacy of teaching methods, including the philosophy supporting it, by utilised data from interviews, dance literature, participants' observation of rehearsals and dance classes, and archives. The interest in examining the legacy of teaching methods could be traced to a range of dance conferences since the 1990s and early 2000s where questions amongst dance scholars were raised concerning the emotional and physical abuse that were occurring in

private dance studios as well as university departments. A few examples of these questions are:

> Will tyrannical teaching methods simply die out when a whole generation retires? Why are authoritarian teaching practices still perpetuated by some members of the whole new generation of postmodern choreographer-teachers? (Lakes, 2005, p. 4)

The psychological state of narcissism was identified as part of the basis to the on-going authoritarian teaching practices. It was suggested that the way dance teachers teach appears to be "an act of narcissism in which dancers are a therapeutic tool" to the artist-teacher (Lakes, 2005, p. 11). A partial excerpt from an interview with Stuart Hodes, a past performer from the Martha Graham Dance Company, was provided as an example:

> She [Graham] was testing me. She raked her nails down the front of my chest to get me to contract more. She raked her nails across my inner thighs to get me to turn my legs out more. Later, when I was sitting on the floor in second position, she saw the marks her nails left on my thighs and said, "I wonder what your girlfriend will think of that? (p. 11)

It was argued by Lakes (2005) that the teacher utilised physical mistreatment to emphasise a teaching point; branding the student by leaving a mark that represented ownership and power. Furthermore, it was also stated that the teacher considered it their right to interfere with the student's private life.

The lack of self-definition as a dance teacher was another individual constraint identified by Lakes' (2005) study, as it was reported that some artist-teachers display an absence of esteem for teaching, viewing it as a lower activity. For instance, George Balanchine once stated he never became a teacher; he became an individual who teaches bad performers to becoming dance teachers (Schorer, 1999). Lakes additionally interviewed Daniel Nagrin, an American modern dancer, teacher, author and choreographer (see Nagrin, 1988, 1997). Nagrin, reflecting about his teaching, stated that he had not reflected about how to teach, he reflected about what to teach. As a result, as it was interpreted by Lakes (2005), artist-teachers who do not consider the study of teaching might be uninformed with respect to the relations between pedagogical practice and personal ideology.

It needs to be acknowledged, however, that the individual constraints identified are part of a range of constraints identified by Lakes (2005) concerning the ongoing authoritarian pedagogical problem. For instance, environmental constraints, such as the traditional western European ballet training concepts and traditional vocational education training concepts were also identified. Traditional western European ballet training concepts refers to the codification by dancing masters to ballet training reflecting values of autocratic societies. An example provided by Lakes referred to the errors that dance students can make during classes, as it can be read in the following excerpt: "When students make errors, they are seen as insulting the abstract ideal of ballet and therefore also the teacher, who perceives herself as one with the subject matter" (Lakes, 2005, p. 15). Traditional vocational education training concepts is characterised by:

> A 'pragmatic construction of schooling' (Perkinson, 1987); a narrowly defined set of goals and skills; a utilitarian view of the subject matter that focuses on product oriented teaching and learning modes; the replication by the apprentice of the behaviour modelled by the master; the acknowledgment by the student that the master knows all the acceptable ways to perform the skill; a trust that the master knows the underlying reasons for his way of performing the skill the inculcation of moral virtues such as 'industry, perseverance, and thrift' (Perkinson, 1987) (Lakes, 2005, p. 13).

According to Lakes the limits of this philosophy within the educational dance field suggests that a master teacher is someone who is a master of the craft, in contrast with being a master of teaching the craft. Dance teachers who exhibit behaviours consensual with vocational education in dance training apply craft associated values onto dance subject matter, which might not flourish on such an approach (Lakes, 2005). Furthermore, Lakes identification of the above-mentioned individual and environmental constraints, suggests that they interact with each other influencing dance teachers' authoritarian practices, which are passed down to the next generation. For instance, Paul Taylor, a former member of the Martha Graham Dance Company, reported an episode occurred while rehearsing with Martha Graham:

> Paul, what are you doing? I said get off [the stage]! You have had plenty of opportunities to learn the back fall on one. Even beginners know the back fall on one. Do you expect me, me, to give you special coaching on the back

> fall on one? Oh no, sweetie pie, you are a big boy now. I am not your mother! (Taylor, 1987, p. 69)

Lakes (2005) analysis of this excerpt suggested that the embedded pedagogical message is that errors are not allowed, learning based on a trial and error method is rejected, learning should happen at a similar speed for all individuals, teachers do not have to have an emphasis on the individual, and classifying adults as children will enhance their learning abilities. Later on, when Paul Taylor formed his own dance company, the Paul Taylor Dance Company, he reported to have utilised similar teaching authoritarian practices, as it can be read below:

> I usually don't yell, but I can become terribly threatening. I've actually hit dancers. I've bitten little fingers that stuck out too much. I've slapped wrists. I've threatened to throw people out of the window. People don't usually learn unless there's a little pain involved (Lakes, 2005, p. 5).

In this case, as argued by Lakes (2005), the teaching strategy is to produce pain during classes for learning to happen. It was noted that teaching practices from the professional dance world, such as professional dance companies, have been reported to being transported to university dance settings for two main reasons. First, because universities accept retired dancers from the professional world (Musil, 2010; Sims & Erwin, 2012); and second, because the professional world of dance is a reference in determining the bar for dance instruction at universities (Bennett, 2009).

This section focused on explaining the ecological dynamics theoretical framework, with its associated constraints-led approach, which explains individual behaviour and the acquisition of expertise as emergent from the interaction of environmental, task, and individual constraints in specific environments (Davids, et al., 2015; Davids, et al., 2008; Seifert, et al., 2013). The previously outlined studies in the section on the constraints-led approach, suggested that environmental, task, and individual constraints have implications for pedagogical expertise, however, none of those studies utilised the constraints-led approach as a theoretical support as a basis for understanding dance teachers' expertise acquisition.

The constraints-led approach can provide an understanding about how pedagogical expertise may emerge from specific environments because its multidisciplinary character is capable of explaining action in terms of the mediation of key constraints that are bounded by the environment, the individual, and the task

(Newell, 1986). Within the constraints-led approach, expert performance may emerge throughout self-organisation processes when individuals are under the influence of constraints. Constraints acting on individuals allow their perceptual attunement to critical information sources which they use to regulate their actions in specific environments. Constraints are perceived as relevant sources of information originating from the continuous interaction between the individual and the environment (Araújo, et al., 2006), thus, adaptive goal-directed behaviour emerges when the individual tries to overcome constraints in order to reach a satisfactory solution (Chow, et al., 2011). Constraints have normally been used to investigate expert athletic performance, here the constraints-led approach was utilised to investigate the acquisition of pedagogical expertise. For example Cairns's (2010) study of expert ballet teachers identified personal preferences for specific ballet styles, family, previous teachers and geographical barriers as being influential on behaviour. The current study can contribute to the identification of the sources of information that expert dance teachers become attuned to, in order to acquire pedagogical expertise.

2.2 EXPERTISE

A plurality of perspectives in relation to how expertise and experts should be defined across many fields was noted within the literature on expertise (Baker, Wattie, & Schorer, 2015; Cooke, 1992; Swann, Moran, & Piggott, 2015). One view applied a comparison-based criterion, whereby expertise was regarded as belonging to specific domains and referring to individuals with outstanding performance that was consistently superior to that of non-experts (Ericsson & Charness, 1994; Ericsson & Smith, 1991b). A second view argued that distinct sets of competencies are not trustworthy because they do not capture the specific nature of expert performance in real contexts. As a result, it was argued that expertise should be viewed as a category organized by the similarity of experts to one another, and conceived of as prototypical, which would mean including standards as well as variability in individuals' profiles (Sternberg & Horvath, 1995, 1998).

A third view put forward the premise that in order to define expertise, a specific standard of performance should be used, and that the criterion to define expertise should be the attainment of a predetermined level of performance in a precise skill (Helton, 2004; Wagner & Stanovich, 1996). A fourth view dichotomised

expertise in terms of routine and adaptive (Hatano & Inagaki, 1986). Adaptive expertise is expressed through an individual being able to exhibit consistently high levels of performance in unstable environments; in contrast, routine expertise is expressed as an individual's high proficiency in a stable environment, that is, one not characterised by change and consequential adaptations to change (Hatano & Inagaki, 1986). A fifth view of expertise, the ecological dynamics, constraints-led view, suggests that expertise is expressed through an individual's capacity to adapt to dynamic interacting constraints present in stable or unstable environments, while pursuing specific goals (Davids, et al., 2008; Seifert, et al., 2013).

Expertise in this context is represented by the emergence of a gradually functional relationship, acquired over time and with task experience, between the individual and the environment (Davids, et al., 2008; Seifert, et al., 2013). The ecological dynamics, constraints-led view of expertise contrasts, for example, with Hatano and Inagaki's (1986) definition of routine expertise-because although some environments might be more stable than others, there is a certain degree of indeterminacy in all environmental systems (Davids, et al., 2007; Glimcher, 2005). Furthermore, there might be other influences affecting expert performance, even in the most stable environmental systems. For instance, indeterminacy might arise from the inherently stochastic nature of individuals (Riley & Turvey, 2002) as individual constraints such as maturation and ageing, affect all individuals and might convey indeterminacy and consequent instability in the relationship between the individual and the environment (Glazier & Davids, 2009).

As described above, there are several views about how expertise should be defined; however, despite the arguments supporting definitions of expertise as comparison-based, prototypical, or criterion-based, the large majority of studies in movement performance activities have used comparison-based paradigms (Baker, et al., 2015; Chua, 2013). Similarly, the ecological dynamics, constraints-led view of expertise has utilised the comparison-based paradigm to explore differences between experts, novices, and non-experts (Seifert, et al., 2013). However, as it is discussed later in this thesis, there are important differences of opinion as to how expertise is acquired, between ecological dynamics, constraints-led proponents (Araújo, et al., 2010; Davids, et al., 2015; Phillips, et al., 2010; Seifert, et al., 2013) and supporters

of other approaches that use a comparison-based paradigm such as deliberate practice (Ericsson, Charness, Feltovich, & Hoffman, 2006; Starkes & Ericsson, 2003).

Previous research on expert performance has identified that a variety of terms, such as "expert", "elite" and "professional", have been adopted in the field of sport psychology to define experts, and it was suggested that this variety of terms creates inconsistency and might influence conclusions about the nature of expertise (Swann, et al., 2015). A number of reasons can be identified for the inconsistency concerning definitions of expertise. For example, Swann and colleagues (2015) suggested that there might be a certain degree of terminological convenience exploited by researchers, whereas Cellier and colleagues (1997) suggested that the criteria for the inconsistency concerning definitions of expertise might differ and be applied inconsistently between domains. In a similar way, research on pedagogy exploring links between expertise and instruction, acknowledged inconsistency across many disciplines with regards to definitions of expertise (Feldon, 2007); therefore, to include a range of studies in reference to the study of expertise, the current literature review covers studies containing all three terms "expert", "elite", and "professional".

2.2.1 Pedagogical expertise

In pedagogy, an important body of work concerning the development of expertise was developed in reference to the education of teachers (Berliner, 1986, 1994a, 1994b, 2001, 2004). Drawing from other fields (e.g., sport, music, medicine, physics), Berliner (1986) identified four potential problems in the study of teachers' expertise. The first, refers to the methodological problems associated with think-aloud and stimulated recall protocols. The second, refers to the specific criteria for identifying experts, such as differences between the objectivity of winning medals in sport and the subjectivity of classroom observation and assessing teachers' performance with standardised tests. The third, refers to the separation between expertise and experience, where experts are necessarily experienced, however, experienced individuals may not always be considered experts. Finally, the fourth, refers to the knowledge systems used in pedagogy, where is difficult to ascertain which knowledge (e.g., subject matter, self, organisation, classroom management) is important in becoming an expert teacher (Berliner, 1986).

Another significant contribution from Berliner (1994a, 1994b) was in providing a developmental model of teacher expertise. This model was supported by

previous research on expertise conducted by Dreyfus and Dreyfus (1986) and was devised in five developmental stages from novice to expert teacher. At stage one, the novice stage, the teacher should learn the elements of the task to be performed and context-free instruction rules, for example: "Wait three seconds after asking a higher-order question" (Berliner, 1994a, p. 10). During this stage specific facts and characteristics of situations should be experienced and learned. At stage two, the advanced beginner stage, the teacher merges experience with verbal knowledge, context begins to guide behaviour, and similarities between contexts are recognised. For example, the teacher may learn that criticism after a bad performance might be motivating for a good student (Berliner, 1994a).

However, the advanced beginner, also within the beginner stage, may lack full responsibility for her or his actions because she/he is labelling and describing events, following rules, and recognising and classifying contexts, "but not yet actively determining through personal agency what is happening" (Berliner, 1994a, p. 12). At stage three, where competence is achieved, the teacher is capable of making conscious choices about what to do because he or she can determine what it is that is important to attend to. For example, concerning curriculum and instruction, the teacher can made decisions as to when to move on to another topic on the basis of a particular teaching context with a specific group of students (Berliner, 1994a). They can define priorities, select plans, set coherent goals and select the appropriate strategies for achieving those goals.

At this stage, teachers frequently feel more emotional and responsible for what happens. At stage four, proficiency, the teacher's know-how and intuition become noticeable in association with the ability to analyse and decide what to do. It was explained that at some point, individuals cease to think about their actions because they have developed an intuitive awareness of the particular situation (Berliner, 1994a). Finally, at stage five, the expert stage, the teacher has an intuitive understanding of situations and responds to demands appropriately and in "a non-deliberative and non-analytic" way (Berliner, 1994a, p. 15). The expert teacher exhibits a fluid performance, in which he or she does not consciously determine what information is relevant to focus on and what action is important to engage in. However, this behaviour might change if anomalies occurred, or if something

atypical happened. In such cases, the expert would bring deliberate analytic processes to the situation (Berliner, 1994a).

As a result of previous work, Berliner (1994a, 2001) identified and described a range of propositions about the nature of pedagogical expertise such as:

> Expert teachers often develop automaticity and routinization for the repetitive operations that are needed to accomplish their goals; expert teachers are more sensitive to the task demands and social situation when solving pedagogical problems; expert teachers are more opportunistic and flexible in their teaching than are novices; expert teachers represent problems in qualitatively different ways than do novices; expert teachers have fast and accurate pattern-recognition capabilities, whereas novices cannot always make sense of what they experience; expert teachers perceive meaningful patterns in the domain in which they are experienced; and although expert teachers may begin to solve problems slower, they bring richer and more personal sources of information to bear on the problem that they are trying to solve. (2004, pp. 200-201)

Here Berliner (2004) argued that propositions about expert teachers are comparable to other propositions in the overall literature on expertise and that expert teachers share the characteristics of experts in other fields such as: chess, physics problem solving, and medical diagnosis. However, as previously mentioned, Berliner's propositions about expertise derived from the earlier work of Glaser (1985, 1990, 1996), which is based on the theory of cognitive psychology. Glaser and Chi (1988) analysed expertise in several domains (e.g., physics, mathematics, chess, bridge, radiology) and described seven key differences in cognitive mechanisms of the human mind between experts and non-experts. It was found that experts outperform primarily in their own domains; experts perceive vast and meaningful patterns, in contrast to novices; experts solve problems faster and with fewer errors than novices; experts have greater long-term and short-term memory than novices; experts perceive and represent problems at a deeper level than do novices; experts spend more time qualitatively analyzing problems than do novices; and experts have better self-monitoring skills than novices have (Glaser & Chi, 1988).

Glaser and Chi's (1988) propositions are highly popular within the expertise literature and have supported approaches to develop expertise in sport (Ericsson &

Charness, 1994; Ericsson, Krampe, & Tesch-Römer, 1993) and in pedagogy (Berliner, 1986). It would appear that this led Berliner to draw on cognitive psychology itself and to explain the acquisition of pedagogical skill, expertise, and teachers' behaviours through knowledge codification, schemas, and representations (Berliner, 1986, 1994a, 2004). However, conclusions and implications from studies supported by cognitive psychology (e.g., Glaser, 1985, 1990), which undertake the existence of internal representations regulating behaviour at the level of the individual should be analysed carefully. Internal representations assume an organism asymmetry (i.e., explaining behaviour by focusing on the individual and neglecting the environment); therefore, neglecting environmental constraints on behaviour can lead to the fundamental attribution error, which is "the tendency for people to make dispositional attributions over situational attributions when establishing the cause of another's person behaviour" (Dunwoody, 2006, p. 141). In other words, cognitive psychology has the tendency to explain behaviours in relation to personal factors and to exclude possible environmental influences. Therefore, traditional cognitive psychology theories can be considered limited in their ability to explain how skill learning occurs because this view is expressive of a separation between an individual's skill and the specific contexts in which she or he is skillful (Turvey & Shaw, 1995). Furthermore, cognitive psychology suggests that learning processes occur exclusively in individuals' minds, whereas from an ecological perspective learning occurs through the individual's interaction with the environment (Dunwoody, 2006).

Studies supported by cognitive psychology neglect environmental influences in memory processes as well as their role in regulating behaviour (Davids & Araújo, 2010). Cognitive psychology processes conceiving behavioural regulation via an internal representation are considered different from ecological psychology processes aiming at behavioural regulation because, from the latter perspective, memory constrains movement behaviour during particular interactions in both performance and practice (Davids & Araújo, 2010), as opposed to being the reason for the construction of an internal representation for controlled behaviour (Araújo, et al., 2006).

Kelso and Engstrøm (2006) explained how spontaneous, self-organizing coordination can shape individuals' intrinsic dynamics and facilitate their behaviour

regulation without any internal representations. This implies that there are significant differences between the role of memory processes and that of internal representations concerning the emergence of coordinated behaviour (Davids & Araújo, 2010). For instance, ecological psychology, in contrast to cognitive psychology, emphasises that the acquisition of skill emerges from the confluence of three components: the environment, with its physical and structural properties; the individual, with its mental and physical properties; and the task, with its specific demands. These three components interact and constrain an individual's behaviour (Warren, 2006), and a consequence of this interaction is that behaviour needs to be adaptive because each, or all, of the above-mentioned components might change whenever a new action is executed (Davids, Bennett, & Newell, 2006). Skilful and adaptable behaviour emerges from the interaction between environmental and individual constraints under specific conditions imposed by a particular task (Araújo, et al., 2004). This highlights differences between cognitive and ecological psychology because adaptability is a key feature of expert behaviour that cognitive psychology has struggled to clarify and substantiate (Araújo, 2007).

Another feature in the study of pedagogical expertise investigated by Berliner was the amount of time that may be required to achieve pedagogical expertise (Berliner, 2001, 2004). Anecdotal examples of teachers' development in the USA were cited suggesting that in some cases three to five years were required for teachers to be "no longer surprised by what happens to them in their schools" (Berliner, 2004, p. 201). Although there is a degree of subjectivity, the above statement suggests that pedagogical expertise may be achieved within three to five years. Berliner (2004) provided another example of a study conducted in Australia, where it was found that non-exemplary experienced secondary school teachers took two years and six months to learn how to teach, while exemplary secondary school teachers took four years and six months (Turner, 1995).

Subsequently, Berliner (2004) discussed another example where 6,000 teachers with more than 100,000 students between them were investigated concerning the relationship between standardised achievement tests and years of teaching experience (Lopez, 1995). It was found that beginner teachers scored increasingly higher during the first seven years of their careers; after year seven, their students' scores changed little for the subsequent 17 years; and then there was a small decline throughout the

few remaining years of their careers (Lopez, 1995). Given the two examples above about teachers' development in the USA by Lopez (1995) and in Australia by Turner (1995) that show a relationship between expertise and time, Berliner (2004) reflected about the ways in which learning could be spent most productively. He investigated research about sport expertise which highlighted the fact that amongst other features, such as a personal desire to become excellent and good coaching, deliberate practice was important (Ericsson, 1996; Starkes, Deakin, Allard, Hodges, & Hayes, 1996). As a result, in reference to the amount of time that may be required to achieve pedagogical expertise Berliner (2004, p. 202) suggested that "The 5, 7, or more years needed for motivated teachers to acquire expertise might be shortened or be made richer if some coaching and deliberate practice were to take place".

The deliberate practice approach to the development of expertise in sport was initially proposed by Ericsson, Krampe, and Tesch-Römer (1993) and by Krampe and Ericsson (1996), and it was suggested that 10,000 hours, or 10 years, are necessary for becoming an expert performer. Supporting this approach is the idea that specific activities, and the time that individuals allocate to them, are key to achieving goals because several anatomical and perceptual-motor qualities can adapt and change during intensive practice over many years (Ericsson, et al., 1993). It was additionally suggested that major modifications can occur during childhood because changes in certain perceptual-motor abilities could be easier to develop during earlier periods of individuals' development. It was noted, however, that motivation and concentration are important attributes in achieving expert performance because deliberate practice consists of activities especially designed for performance enhancement, and they are usually effortful, difficult, and not enjoyable (Ericsson, et al., 1993). To overcome these difficulties that individuals experience during extensive periods of intensive deliberate practice, parental support and early access to instruction is important (1993) because it is assumed that teachers or coaches are capable of designing goal-directed training activities aimed at the improvement of specific aspects of individual performance (Ericsson, 2002).

Similar approaches that also claim that significant amounts of deliberate practice by students, as well as their teachers, parents, and peers are important in the development of pre-professional dancers towards expertise, have been described in dance literature (Van Rossum, 2001). Van Rossum (2001) investigated 129 dance

students in the Netherlands aiming to become professional performers, independent dance artists, and dance teachers, and he claimed that participants started to dance at ages ranging from 3 to 33 years of age (M = 10.2, SD = 5.8) and that deliberate practice was incremental, starting from four hours and progressing to 10.9 hours per week. In another study, Van Rossum (2004) found that dance students devote an average of 24 hr per week specifically in dance practice, this excludes other practice related to physical preparation, theoretical classes, and preparation and rehearsal for performance. On average, at the age of 22, students have been involved in dance and dance training for a period of 10 years (Van Rossum, 2001).

However, a limitation of the deliberate practice approach concerns the inter-individual variation in achieving an expert level of performance. For example, studies of performance in chess have shown that the amount of practice may vary considerably in relation to individual parameters (Gobet & Campitelli, 2007). Gobet and Campitelli examined 34 chess players and provided evidence that the mean number of hours to reach a master level was 11,053, with a standard deviation of 5,538 hours and a range from 3,016 to 23,608 hours. This inter-individual variation suggests that deliberate practice alone does not address a complexity of factors such as the motivational, developmental, and psychosocial state of the individual (Baker & Côté, 2006); therefore, in efforts to account for the development of expertise the deliberate practice approach, by itself, is limited.

Another limitation of the deliberate practice approach concerns its theoretical support of concepts from cognitive psychology. Ericsson and Charness (1994) argued that expert performance is centred on physiological and cognitive mechanisms in the mind or in the body of the individual that rely on mental representations; in this sense, the environment is considered important because mental representations are created from environmental information. Ericsson argued that, through deliberate practice, mental representations are refined and contribute to increasing the speed of performance (Ericsson & Towne, 2010). However, Ericsson and colleagues (1994; 2010) did not explain how physiological mechanisms connect with mental representations or how interaction between the individual and the environment occurs (Araújo, 2007). Additionally, they stated that "exceptional abilities are acquired often under optimal environmental conditions" (Ericsson & Charness, 1994, p. 729); yet, the deliberate practice approach focuses solely on the

individual, and concerns itself with how individuals acquire domain-specific mental representations, not with how individuals and the environment codetermine one another during practice (Barab & Plucker, 2002).

The enriching of mental representations, as argued by Ericsson and colleagues (Ericsson, 2007; Ericsson & Smith, 1991a), is what distinguishes experts from novices; however, research exploring ecologies between the individual and the environment pointed to limitations to the role that mental representations can have in human performance. Mental representations in human performance contemplate conceptual and categorical representations as meanings of symbols; and, as explained by Araújo (2007), the purpose of mental representations is to facilitate an epistemic connection between the individual and the environment. To accomplish this purpose, mental representations need to be grounded (grounding clarifies what a symbol refers to, and explains the rules of manipulation that stipulate what the meaning of the symbol is, in context) because an ungrounded symbol generates speculative theories concerning how to regulate behaviour (Shaw, 2003). Specifying and grounding involve decreasing conventions through perception; therefore, there is a need for direct perception in specifying and grounding because without direct perception of the real world a symbol loses its meaning (Shaw, 2003).

Ecological psychology explains how the individual through direct perception while interacting with the environment, becomes attuned to affordances that better specify goal achievement. From this perspective, perception of affordances frames the basis on which an individual can organise her or his behaviour (Turvey & Shaw, 1995). Under this ecological reasoning, individuals' behaviours are shaped by perception of affordances, so there is no need for mental representations, as argued by proponents of the deliberate practice approach (Ericsson, 2007; Ericsson & Smith, 1991a). The abovementioned exemplifies that from an ecological perspective, understanding the environment with its contextual influences is understanding the individual and vice-versa (Barab & Plucker, 2002).

2.3 DANCE TEACHERS' PEDAGOGICAL DEVELOPMENT

Pedagogical practice in higher education in dance has changed considerably since the 1970s (Bond, 2010; Risner, 2010a; Stinson, 2010). During the 1970s and 1980s, dance teaching in higher institutions in the USA as well as in many European

countries focused on theatrical, defined performance outputs by adopting specific dance styles to teach, such as ballet or modern dance (Smith-Autard, 2002). Tertiary dance education in Australia has historically been influenced by the USA and by Europe (Stock & Dyson, 2006). As an example, in Australia, at Queensland University of Technology (QUT) dance courses have been developed based on higher education models from the United Kingdom (UK) and USA since the 1980s (Roche & Huddy, 2015).

According to Smith-Autard (2002), teaching in tertiary education institutions was essentially product-oriented back then, and the dance teacher's approach was based on direct teaching, with the teacher the expert and the student, the apprentice. The emphasis was on training towards dance performance, with dance technique being dictated by the specific style of dance being taught (e.g., Cunningham, Graham technique and ballet), and where the teacher had control and authority and the student mimicked the teacher (Smith-Autard, 2002). This teaching approach was criticised as limited for dance education because it did not include the development of students' individuality and creativity (Shapiro, 1998; Stinson, 1997).

During the 1990s, dance pedagogy in Australian tertiary education institutions evolved from the initial focus on the teacher to a focus on the student. Tertiary education institutions adopted a student-centred approach (e.g., Stock, 2004) where students were encouraged to explore and develop individual movement concepts and principles. Although the student-centred approach would include the previous teaching approach that had focused on theatrically defined dance techniques, the focus was on increasing students' knowledge in dance related disciplines as well as on developing individuality, creativity, and imagination (Smith-Autard, 2002). Changes from a teacher-centred approach to a student-centred approach challenged dance teachers in their need to acquire a different kind of knowledge and different skills to be effective. For instance, Kahlich (1993) suggested that the focus on the student would require dance teachers to fill the roles of facilitator, catalyst for change, and caring person. Dance teachers as facilitators would connect students with community resources, which would require interpersonal and organisational skills; as catalyst for change, dance teachers would be required to acquire political and creative thinking skills to implement changes in students and in systems of

schooling; and as caring persons, dance teachers would be caring about their students (Kahlich, 1993).

An example of an organisational structure of a tertiary education institution in Australia that adopted the student-centred approach was provided by Stock (2004). Her argument proposed that the trainers of prospective dance practitioners should think through the following:

> …maintaining and developing students' passion for dance via increasing embodied dance knowledge in intensive studio-based practice; providing contextual learning in dance-specific, cultural and technological literacies; making connections through partnerships, work placements and external projects; broadening knowledge beyond dance to cultural and creative industries and interdisciplinary practice; and, producing 'life-long learners' through a student centred approach which encourages independent thinking and inquiry in collaborative teams and individually (Stock, 2004, p. 1).

Stock (2004) outlined beneficial strategies that were in line with research from sport and showed the advantages of considering cognition and decision making, based on the interaction between the individual and the environment (Araújo, et al., 2006), to address real world challenges in dance practitioners' education. Stock's (2004) proposal appears to be important because if it were adopted, prospective dance teachers would have opportunities to interact with industry professionals and to experience the real world by engaging in projects with dance companies, art organizations and the wider community. Experiencing a wide range of teaching and learning environments in person would facilitate prospective dance teachers' acquisition of knowledge of practice in specific contexts, rather than their having to learn how to teach outside of a specific context of application.

However, because the acquisition of pedagogical expertise is domain and context dependent (Berliner, 2001; Sternberg & Horvath, 1995), a question that emerges from an ecological perspective is which variables (e.g., previous dance teachers, choreographers, peers, dance genres), within specific environments, may provide affordances to support prospective dance teachers' pathway to expertise? The ecological approach to cognition and decision making states that affordances need to be understood in relation to information and intentionality because if decisions are not comprehended through action, cognition is redundant (Araújo, et

al., 2006). This suggests that dance teachers' development needs to be understood in relation to the perception of information from a specific environment, which regulates behaviour towards the achievement of specific pedagogical goals. This supports the ecological view that perception can shape action (Gibson, 1966) because specific goal-pathway information is detected throughout perception (Shaw & Turvey, 1999); therefore, there is a need to understand which sources of information, from which contexts, are more conducive to teachers' pathway towards expertise.

To exemplify how specific environments may provide affordances to support dance teachers' pedagogical development, an example of peer collaboration from higher education is provided. Østern and Øyen (2014) argued that dance teacher peers in higher education could interact with one another and achieve successful pedagogical collaboration by recognizing their differences, while moving towards a common pedagogical goal (i.e., to develop prospective dance teachers' awareness of difference among students as a creative and critical force). The collaboration discussed by Østern and Øyen started in a dance group project where Østern was the group leader and Øyen, a wheel chair user, was a dancer. Subsequently, they developed a collaboration in dance classes on the basis that differences between individuals could be viewed as a central value in the education of prospective dance teachers (Østern & Øyen, 2014).

Østern and Øyen's inter-individual differences were the central force in developing a creative pedagogical design, which was utilised to draw students' attention to diverse content features aiming at inclusiveness and diversity. It was stated that "pedagogical design means that attention is brought to the importance of the form of the teaching and that the teacher is understood as a designer of the teaching process" (Østern & Øyen, 2014, p. 102). Although Østern and Øyen (2014) highlighted that their pedagogical design was under development, a brief description of their progress thus far was provided in the study. It told of how they started teaching events with a little piece of performance from previous teaching events, both for prospective dance teachers to perceive them dancing and because that piece provided a basis for the theoretical part of the lesson. Then, Øyen assumed a centrality by sharing personal experiences with the dance teacher audience, including discussion of exclusion, inclusion, the impact of the teacher, the design of the teaching, and what dance is and what its potential from her perspective might be.

Østern then continued by linking Øyen's personal stories to theory and pedagogy, and prospective dance teachers would be invited to take part in a workshop based on the values of inclusiveness and diversity, and in the establishment of a connection between the practice presented and the theoretical perspectives (Østern & Øyen, 2014).

Three different features of Østern and Øyen's interaction were pointed out as being significant for the pedagogical design they created: personal and vocational mix, pedagogical design with volume, and equality in taking and giving space. 'Personal and vocational mix' refers to Østern and Øyen's different types of knowledge. Østern is more knowledgeable about dance through her education and experience, whereas Øyen is knowledgeable about her personal experience, both beyond the world of dance and as a dancer (Østern & Øyen, 2014). This combination of vocational and personal aspects appears to be a positive feature contributing to their interaction because it allows the inclusion of varied individual perspectives on dance and dance education.

Furthermore, it has been suggested that exploring individual variability by fostering interaction is beneficial for pedagogical development because it provides opportunities for perceiving other dance teachers' behaviours and to learn from them (Lord, 1993). 'Pedagogical design with volume' means that Østern provide ideas, direction, shape, and lesson plans, while Øyen provides depth to ideas through her dance embodied experience and from life outside dance. Finally, 'equality in taking and giving space' refers to the understanding of how participative equality between Østern and Øyen, can be used for effective pedagogical interaction. Due to their previous life experiences and background, where Østern was an active individual and Øyen mainly a passive individual, Østern needed to work on giving space, while Øyen needed to work on taking space (Østern & Øyen, 2014).

The fit coordination appeared to have emerged from the analysis and reflection of their pedagogical practice, most probably, because reflection may have facilitated their shared awareness of each one's intrinsic dynamics (Kelso, 1991). Therefore, the balance of 'equality in taking and giving space' culminated in Østern's behaviour of giving space and Øyen' behaviour of taking space. The effective accomplishment of both actions, taking and giving space, resulted in the creation of the pedagogical design and in feelings of personal gratifications for both. Østern reported

experiencing positive feelings of becoming more attentive and Øyen reported experiencing feelings of being empowered (Østern & Øyen, 2014). This example suggests that pedagogical development can be facilitated by the establishment of relationships between teaching peers; however, a condition that needs to be met is to find a suitable combination of inter-individual differences (Østern & Øyen, 2014) maybe by developing individual's awareness of his or her intrinsic dynamics (Kelso, 1991).

Several other suggestions to improve the effectiveness of dance teachers have been made by a number of dance pedagogues. Lord (1993), for instance, suggested that in order to be effective, dance teachers need to acquire a set of specialised communication skills tailored to specific students' needs, and in relation to the intended learning outcomes. To this extent, it was suggested that dance teachers could adopt professional developmental practices from the field of physical education (see Siedentop, 1991), such as: critical attitudes (i.e., motivation for self-development); professional knowledge focused on teaching strategies (i.e., communication strategies); and the ability to perceive peers, students, and their own behaviour (Lord, 1993). Furthermore, Lord (1993) stated that prospective dance teacher's effectiveness could not be developed without the establishment of networks of recognized dance teaching professionals from primary and secondary school, private dance schools, and universities. It was suggested that these networks are important because they promote direct interaction between dance teachers, so that prospective dance teachers can acquire knowledge and skills by perceiving other dance teachers as well as by being assessed on their own teaching (Lord, 1993).

Andrzejewski (2009) proposed a model of holistic dance teacher education based on four tenets: a) focus on the individual as a whole is necessary; b) an integrated curriculum should be embraced; c) explicit identity development must be aimed for; and d) apprenticeships in significant communities of practice should be developed. The main feature of this model is its tenets inter-relation and unifying nature benefiting the individual as a whole (Andrzejewski, 2009). This model is suggested as being universal to all teachers education and it aims to "map what teachers need to know and be able to do" (Andrzejewski, 2009, p. 17).

Andrzejewski's model (2009) represents a significant contribution to teachers' pedagogical development because it is holistic and environmental in nature. This

model favours the exploration of individuals' contextual experiences in all relevant communities of practice including: dancers; teachers; and, dancer teachers (Andrzejewski, 2009). Undeniably, there are benefits in exploring communities of practice in order to learn and develop skills (Lave & Wenger, 1991); however, there may be power relationships involved in communities of practice that might not be positively conducive to new members' full participation (Roberts, 2006). Roberts (2006) highlighted the fact that although communities of practice include members with different levels of experience, age, expertise, and authority, members who are more experienced usually have full participation and exert most power in the negotiation of meaning. An implication of the expression of power is that it may be difficult for new, younger, or less experienced members of the community to access knowledge and move from peripheral participation to full participation.

An example of behaviours involving power in dance teaching was given in Lakes' (2005) study, where it was argued how more experienced and established teachers within specific dance schools or dance companies, exerted their power to control and teach dance students and performers. For instance, it was highlighted that "By withholding excitement, enthusiasm, or positive feedback, the teacher's use of silence can be a manipulative tool of power and authority in the classroom" (Lakes, 2005, p. 6). Lake's example shows how power might influence the degree to which members may participate and learn in communities of practice within the dance context. Therefore, a limitation of Andrzejewski' (2009) model is its sole focus on communities of practice for teachers' development, given there might be other resources such as parents, teachers, and mentors contributing to such development (Subotnik, Olszewski-Kubilius, & Worrell, 2011).

Mainwaring and Krasnow (2010) advocated for the idea that mentoring is a critical factor affecting learners' development because in "the students' minds, the teacher brings not only personal perspective to the environment, but represents the broader knowledge of the field, and all the teachers that have come before this individual" (Mainwaring & Krasnow, 2010, p. 19). This highlights teachers as mentors as having an important role in influencing an individual's development. Dance teachers, according to Mainwaring and Krasnow (2010), can adopt an authoritarian or a student-centred approach of teaching because irrespective of which approach is exhibited, teachers are perceived as role models by students. In contrast,

teachers, as mentors, can provide the function of a role model by valuing the whole person with its individual needs and differences. It was suggested, therefore, for dance teachers to become aware of the influence that they may have upon students, and utilise it by enforcing discipline, creating a focused climate and, at the same time, providing encouragement through enthusiastic and constructive criticism and praise (Mainwaring & Krasnow, 2010).

Although Mainwaring and Krasnow's (2010) propositions appear relevant to dance field, their implementation may not be easy because authoritarian and student-centred approaches appear to be at opposite ends of the teaching paradigm (Dragon, 2015), and the pedagogical values and strategies of the two approaches are different and have different consequences. For example, although constructive feedback appears to be aligned with student-centred approaches (Barr, 2009), and negative feedback with teacher-centred approaches (Lakes, 2005) the literature on role models suggests that negative role models could have a positive regulatory effect because the individual perceives actions to be avoided and moves in the opposite way (Lockwood, Jordan, & Kunda, 2002). Furthermore, there have been suggestions that even now dance teachers follow behaviours from their previous dance teachers, which are teacher-centred approaches (Dragon, 2015); for these reasons, the role that experienced dance teachers may have as mentors in dance teachers' acquisition of expertise require further investigation.

Further to the role that teachers may have as mentors, Mainwaring and Krasnow (2010) proposed another scheme, in the form of specific guidelines, that dance teachers could adopt to improve their pedagogical education. They suggested sixteen guidelines divided in three sections: process and goals, influences affecting the dancer, and structure and content of the class. The specific features of each section can be read below.

> Process and goals:
>
> 1. Smart planning: encourage students to set specific, measureable, age-appropriate, realistic, and time-targeted goals;
> 2. Decision-making by objective: provide variety in decision-making aspects of class and identify the objectives to be met by each task;

3. Optimizing the self within community: recognize individual differences and optimize individual potential; encourage students to work in collaboration with peers;

4. Ritualizing respect: foster an environment of mutual, reciprocal and self-respect in and out of the classroom; Influences affecting the dancer

5. Mentoring: embody the qualities of a positive leader and role model

6. Nurturing the learner: provide positive reinforcement and constructive criticism in ways the student can develop skill mastery and comprehension of principles

7. Creating fun and challenges for all: foster an enjoyable, challenging atmosphere for learning and experience

8. Empowering the self: recognize and positively reinforce the dancer for personal qualities and contributions to the class; empower students to feel good about their bodies and their self-development

9. Focusing on the task: encourage students to focus on the task at hand and not the outcome or social or inter-personal comparisons

10. Thinking about learning: provide opportunities for students to explore personal metacognitive strategies ("how do I learn?" activities and discussion) Structure and content of the class

11. Building foundations: build foundations of domain specific knowledge in progressive sequence and with complementary background information

12. Mixing and matching: provide opportunities to learn or process information in various ways across learning tasks and situations, including somatic and analytic strategies, and contextual variety

13. Developing body awareness: provide somatic experiences, information and opportunities

14. Enhancing body image: provide opportunities to discuss and reinforce healthy body image and supportive strategies in terms of nutrition and conditioning

15. Embracing the safe and sound: ensure safe practices are established and based on sound scientific, medical and/or empirical evidence regarding alignment work and prevention and management of injuries

16. Creating enlightened practice: provide constructive feedback and incorporate appropriate repetition (Mainwaring & Krasnow, 2010, p. 15).

It was suggested by the above authors that if dance teachers would follow these theoretical foundations, matching them with practical strategies, a respectful

environment conducive to higher levels of technical mastery and self-esteem in learners would be promoted (Mainwaring & Krasnow, 2010).

Providing guidelines is a constructive accomplishment, as it suggests a plethora of strategies aimed at dance teachers' pedagogic development; however, there are limitations to what guidelines can do because each pedagogical environment is distinct and regulated by particular properties (Bullough & Baughman, 1995). Therefore, the implementation of guidelines might not be directly applicable to every teaching and learning environment. For example, one of the guidelines provided was "Ritualizing Respect: Foster an environment of mutual, reciprocal and self-respect in and out of the classroom" and it was emphasised that "concentration and mutual respect, rather than autocratic rules and good behaviour" should be optimized (Mainwaring & Krasnow, 2010, p. 15). However, the implementation of "concentration" might be dependent on the type of learners as well as on the learning goals because, as previously explained, goals set behaviours (Riccio & Stoffregen, 1988).

Consequently, creating a pedagogical climate might depend on which behaviours are intended to emerge, according to particular learning goals. For example, an atmosphere of "concentration" might not always be appropriate for teaching children creativity, because it might constrain movement behaviour significantly (Lindqvist, 2001), although it might be more adequate for developing dramatic movement expression (Camurri, Lagerlöf, & Volpe, 2003). The above argument highlights the fact that although guidelines are important, they might also be limited if contextual information (e.g., knowledge of learners and pedagogical goals) is ignored.

2.3.1 Teaching Technique as Subject Matter

With the aim of improving the quality of dance teaching, Gilbert (2005) argued for dance teachers to move away from teaching technique and to utilise a steps-only approach to the teaching of an in-depth curriculum which should include: concepts (e.g., history, anatomy, dance vocabulary), technique (e.g., steps, fundamental movement, and patterns), choreography and improvisation, written and verbal feedback, and students and teachers' reflections. Gilbert further contended that teachers who teach only steps and routines are creating passive learners, whereas teachers who deliver a conceptual approach provide a deep and balanced learning

experience for their students. However, because dance teachers in the past have often been observed to use abusive teaching strategies in their studios to inspire students, it is acknowledged by Gilbert that dance teachers might lack the knowledge and skills to develop a conceptual approach to teaching and training. Gilbert further claimed that dance teachers in general might lack teaching skills or knowledge of: choreographic principles, dance techniques, pedagogy, somatic practices, dance history, culture, and philosophy.

One suggestion made by Gilbert (2005), for enhancing dance teachers' knowledge and skills, was for them to engage in collaborations with more experienced dance teachers with similar pedagogical goals. Aligned with this suggestion it was stated by Gilbert that, "There are master teachers in exemplary dance education programs in public and private schools in the United States", (p. 35) with whom dance teachers could collaborate in order to share ideas, research, and create networks, which would result in enhancing the quality of dance teachers' teaching. However, Gilbert (2005) did not clarify what the criteria might be for defining "master teachers" or "exemplary dance education". Without knowing what that criteria might be, it would be difficult for dance teachers to improve their pedagogical knowledge and skills because they would not know what to aim for.

Another example illustrating the fact that adopting the teaching strategies of previous teachers and teaching technique as subject matter is not a sufficient condition for effective dance teaching was provided by Fortin (1993). Fortin (1993) argued that replication of previous teachers' behaviours has resulted in dance teachers focusing on acquiring a repertoire of movement and technique which lacks pedagogical content knowledge (Shulman, 1986) in order to satisfy different groups of learners. Fortin (1993) reported that from her own experience, university students have difficulties trying to integrate subject matter with knowledge of pedagogy. These difficulties, force students to focus on teaching the mastery of a repertoire of movement because this relates to effective behaviours they have perceived in their previous teachers. Fortin (1993), therefore, advocated that teacher preparation should include exploration of different activities in many contexts to generate a variety of teaching strategies. Nevertheless, although dance teachers were encouraged by Fortin (1993) to develop pedagogical content knowledge during practice in multiple environments and were guided by a university teacher with an extensive pedagogic

knowledge background, it was not clear which type of practice was most conducive to dance teachers' development.

Research in pedagogical expertise indicated that content knowledge (i.e., teachers' knowledge of subject matter), pedagogical knowledge (i.e., teachers' general knowledge of instructional methods), and pedagogical content knowledge (i.e., teachers' unique knowledge in which content and pedagogical knowledge are integrated) are required to achieve teaching expertise (Shulman, 1986). The literature on dance pedagogy suggests that most dance educators support the integration of knowledge of subject matter with pedagogical knowledge for effective teaching (Andrzejewski, 2009; Connell, 2009; Fortin & Siedentop, 1995; Kassing & Jay, 2003; Warburton, 2009); however, an enduring question remains: how to achieve the suitable combination of subject matter and pedagogical knowledge requirements for effective teaching given that pedagogical effectiveness is context and domain dependent (Berliner, 2001, 2004).

Shulman (1987) further explained that the knowledge base for teaching is supported by subject matter and pedagogy and that the teacher needs to be capable of transmitting subject matter through specific teaching strategies inclusive of adaptability to variations in students' abilities and backgrounds. However, Shulman's previous work conceived of teachers' learning as cognitive and individual (Shulman, 1986, 1987); only in later work did Shulman recognise that learning needs to be understood in relation to the environment. He therefore shifted from his idea that learning needs to be cognitive and individual, and proposed the 'Fostering a Community of Learners' (FCL) model in which teachers' learning is acquired through interaction within communities and contexts (Shulman & Shulman, 2004).

The implementation of the FCL model, according to Shulman and Shulman (2004), facilitated an enhanced understanding of several ways in which teachers engage with processes of learning how to teach, because meaningful interactions between students, the teacher, the program learning, and the characteristics of the policy environment can be understood. The structures of skilled teacher development and teacher learning within this model are practice, vision, reflection, motivation, understanding, and community. These structures, as argued by Shulman and Shulman (2004), are utilised to identify different stages at which teachers might operate within the model. It was concluded that in the FCL model, learning moved

from a concern with individual teachers' learning, to a concern about teachers' learning within the broader context of community, institution, policy, and profession (Shulman & Shulman, 2004).

Shulman and Shulman's (2004) FCL model identified a range of constraints in the development of teachers such as individual, community, and policy. Individuals' constraints included motivation, understanding, vision, practice, and reflection; community constraints included shared vision, knowledge base, shared commitment and support, and community of practice; and policy constraints included different types of capital: moral, venture, curricular, and technical that influence teachers' development. Although details about the above findings were not provided, Shulman and Shulman stated that from a teacher's learning perspective, the findings facilitated an enhanced consciousness of the complexity of learning to teach "in a theory-intensive reform context", which was significantly dissimilar from the previous approach to teachers' learning focused on the individual (Shulman & Shulman, 2004, p. 269). Moreover, it was highlighted that the FCL model might be useful for understanding why ambitious pedagogical reforms might work successfully in specific settings, while in others it might fail completely or partially. The value of the FCL model lies in the potential identification of individual, community, and policy constraints influencing the teacher's learning and behaviour; however, one possible limitation of the model is that its implementation may require adaptation for specific contexts.

As an example, Shulman and Shulman (2004) argued that the FCL model was aimed at teachers learning about teaching; however, they did not explain how learning occurs, nor how individuals specifically address change. Perhaps, this is why Shulman and Shulman said that "We cannot claim that through this work we demonstrated how to prepare teachers to teach in an FCL-compatible environment" (Shulman & Shulman, 2004, p. 269). Shulman and Shulman's (2004) difficulties with preparation of teachers to teach might have been because practice and theory, in reference to the individual, community, and policy, might not relate directly to one another since the expression of the above mentioned factors (i.e., individual, community, and policy), acting as constraints, might differ between environments and influence individuals differently. This could be verified, for instance, in Shulman and Shulman's (2004) observations that teachers might have the requisite skills, but

they might lack an understanding of their purpose and rationale for teaching – or perhaps they might be unwilling to apply them. This exemplifies the influence of individual constraints on the preparation of teachers.

Because teaching is context specific (Berliner, 2004), the influence of specific environments on teachers needs to be understood through their direct interaction with them. Through interaction, teachers can perceive which information might be useful and as a consequence make the appropriate adaptations to achieve specific goals and, thus become effective teachers in their specific environments. To exemplify: as previously described in Bullough and Baughman's (1995) study, a teacher might be an expert in a specific context; however, she becomes a beginner teacher when teaching in a different context. This suggests that the implementation of the FCL model is dependent on the attunement to specifying contextual affordances, which might require time for exploration and practice (Gibson & Pick, 2000). Furthermore, the amount of time may vary significantly between individuals; therefore, teachers' development needs to be considered individually.

Within the constraints-led approach, an individual's behaviour is guided by the interaction of different constraints arrangements within her or his perceptual-motor system (Chow, et al., 2011); therefore, learning can be directly linked to the mechanisms of change associated to the relevant information used during an individual's action (Jacobs & Michaels, 2007). This implies that teachers' development depends on selecting precise information concerning the creation of practice conditions that provide them with opportunities for interaction and on becoming attuned to the specifying information in her or his specific environment- because it is through interaction that the individual experiences events and recognises which sources of information might be critical to her or his performance (Gibson, 2000).

2.3.2 The Influence of Previous Experience as an Expert Performer in Becoming a Dance Teacher

Another key limitation to pedagogy enhancement in the field of dance is the belief that expert dance performers naturally become good teachers (Warburton, 2008). Transitions from expert dance performance to teaching dance are perceived as typical because experience as an expert performer is usually associated with expertise in teaching (e.g., "She is a famous dancer; he is a known choreographer.

These individuals must know how to teach dance" (Warburton, 2008, p. 11)). It has been suggested that expert dance performers might have the tendency to extrapolate non-pedagogical individual abilities (i.e., performance abilities) to the field of teaching (Fortin & Siedentop, 1995) and, indeed, some individuals might naturally evolve in their careers from expert performance to teaching or coaching (Bailey & Pickard, 2010; Schinke, Bloom, & Salmela, 1995). However, successful transitions have not always been evident in dance, as only a limited number of expert performers become expert pedagogues (Gilbert, 2005; Warburton, 2008).

Supporting this assumption, research on expert coaching in sport has suggested that not everyone can achieve expertise, no matter for how long they strive (Nash & Collins, 2006). A possible explanation for why only some individuals might achieve coaching expertise, as advanced by Nash and Collins (2006), is that sport coaching is conducted in complex and dynamic environments; therefore, expert coaches need to combine knowledge, information, and situated experience to be able to function effectively. However, as highlighted by Nash and Collins (2006), not everyone is capable of achieving such combinations to respond effectively to specific and contextualised demands, this suggests that knowledge, information and situated experience are significant in becoming an expert coach or pedagogue.

In the field of dance, it has been suggested that a possible reason for expert dance performers' failures at developing into effective teachers is that they might not consider as important, the pedagogical knowledge foundations such as teaching and learning theories, dance techniques, choreographic principles and processes, dance history, and somatic practices that are essential for teaching dance (Gilbert, 2005). McCutchen (2006, p. 54) added, in reference to K-12 education (K-12 refers to the sum of primary and secondary education in many countries), that dance teachers require teaching skills divided over three areas: "the content and skills in the art of dance, the theories and practices specific to dance education, and the theories and practices of education". The content and skills in the art of dance include: knowledge of anatomy, kinesiology, somatic techniques, injury prevention, aesthetics, history, criticism, non-western dance forms, major choreographic works, and movement analysis. The theories and practices particular to dance education include: knowledge of motor development, aesthetics, theory and pedagogy of teaching different dance styles, and training principles. Finally, the theories and practices of education include

knowledge about child development, social development, and assessment. The range of competencies that dance teachers need to acquire for effective teaching suggests that if expert performers relied only on skills and knowledge acquired through performance (i.e., specialised skills in various dance styles and knowledge about the development of the expressive body) they would be ill-prepared for teaching (McCutchen, 2006).

It has been observed that a significant number of expert dance performers end up teaching at some point during their careers (Jeffri, 2005; Jeffri & Throsby, 2006; More, Carroll, & Foss, 2008). Transitions from expert performer to teacher were acknowledged worldwide in countries such as the United States of America, the United Kingdom, Canada, and the Netherlands (Jeffri, 2005) and they are gradually being viewed more as a natural progression than a termination of a previous activity (Bulkley, 2014; Jeffri, 2005; More, et al., 2008; Roncaglia, 2010). Of particular interest within transitions is the gap between an actual performer's expectations in becoming a teacher and what former dancers actually did for a profession. According to Jeffri (2005) a performance dancer's tendency to teach was considered low at that time (e.g. 2.6% for American dancers, 2.7% for Australian dancers and 10.7% for Swiss dancers), which implies that at that time, teaching was not the preferred occupation for dancers. However, the fact is that the ex-performers did actually teach, and in high numbers (e.g. 71.3% for Australian dancers, 53.2% for American dancers and 68.6% for Swiss dancers) (Jeffri, 2005). There is not a clear understanding about the paradox between the low number of individuals interested in teaching and the high number of individuals actually teaching, although there have been suggestions that a major reason relates to financial compensation (Sims & Erwin, 2012).

In ballet, for instance, transitions from professional performance can be complex and challenging because they involve re-training, learning new skills, and career change development (Roncaglia, 2008). More and colleagues (2008), for instance, stated that in Australia, a significant number of professional dancers make the transition from dance performance to dance teaching, although, usually without the required training for teaching, because dancing requires different skills from teaching, and being an excellent dancer might not mean becoming an effective dance teacher (Musil, 2010). In order to address professional dancers' transitions to

becoming effective teachers, it was suggested that professional dancers could explore teaching while still professional performers, because this strategy would allow them to develop teaching skills concomitant with performance skills (More, et al., 2008). This rationale justifies the need to investigate whether or not previous experience as an expert performer is necessary in order to become an expert dance teacher.

2.3.3 Pedagogical Expertise in Dance

Few studies have explored pedagogical expertise in dance. Nonetheless, one exception is the study by Cairns (2010), who explored the professional practice and developmental pathways of two expert ballet teachers by adopting Sternberg and Horvath's (1995) prototype view of expertise. A prototype view on expertise incorporates standards and simultaneously allows for variability in the profile of individuals (e.g., variety in the population of expert teachers) (Sternberg & Horvath, 1995). Cairns' (2010) description of the teaching practices of participants in his study included mention of features of their teaching such as the way they focused on correct classical ballet technique, explored students' artistic understanding, exhibited effective communication, perceived students' errors, taught beyond syllabus, and provided a vision and goals to students.

Although the description did not include the specifics of how these experts became experts, it referred to features of the participants' life, such as geographical barriers, family, previous teachers, and personal preferences for specific ballet styles potentially influencing their acquisition of pedagogical expertise. These features, as previously stated, can be viewed as environmental, task, and individual constraints (Newell, 1986) and, in relation to one participant, Zan, it would appear that the interaction between environmental constraints, such as international exposure, previous teachers, peers, financial support, and family were important in his pedagogical development; whereas, in relation to the second participant, Zin, an interaction of individual and environmental constraints such as shaping a teaching identity and creating her own knowledge, could be identified as being more influential. Additionally, in reference to Zin, it was reported that her personal preference for the Russian style of ballet as the main foundation to her teaching, seemed to influence her pedagogical behaviour; for instance, her ballet syllabus and her teaching strategies were based on the Russian style.

Despite the differences highlighted above in participants' pedagogical development, similarities were also acknowledged by Cairns (2010). For instance, both, Zin and Zan were truly dedicated to teaching and valued learning from expert ballet masters and role models (Cairns, 2010). However, even if similarities between individuals, such as learning from expert ballet masters and role models, could be found in Cairns' study, it could also be understood that these similarities can occur in different ways. To illustrate: Zin did not have access to expert ballet masters and role models during the beginning of her teaching career; therefore, she relied on herself to develop teaching methods. Only much later did Zin have the opportunity to learn from peers and from internationally renowned ballet master teachers. On the other hand, Zan had access to expert ballet master teachers and role models from a young age, when he was a professional performer (Cairns, 2010).

Cairns' (2010) study highlights how individuals can be influenced by many constraints and additionally suggests that even under the influence of similar constraints, individuals may exhibit different behaviours. Maybe it was due to these inter-individual developmental differences expressed by individuals such as Zin and Zan, in the way they dealt uniquely with constraints, that Cairns (2010) recognised that each expert ballet teacher had a unique pathway towards the attainment of expertise. This is in line with previous research on expertise in sport (Phillips, et al., 2010) and in dance (Chappell, 2007a, 2007b) which acknowledged individual pathways towards expertise.

Chappell's (2007b) study is another example of dance research focused on the topic of pedagogical expertise, where expert dance teachers' pedagogical practices in teaching for creativity with late primary age children were investigated. The experts' backgrounds in Chappell's (2007b) study was described as being distinctive to each participant, as each had a unique education and professional background. This uniqueness characterised their development as complex because it was dependent on many influences, differences in education, and teaching experience as can be observed from the quotation below:

> With 15 years professional experience, Michael had a relatively 'education' focused background with a Post Graduate Certificate of Education (PGCE) in Drama/English and a Masters in Education, and past experience of teaching dance in schools and PGCE lecturing. He also had Community

> Dance Leaders qualifications and taught and choreographed in community settings in both dance and drama, for a range of ages and experiences. During the research, he was teaching Year 5 classes, weekly in an inner-city London primary school as part of a term-long project.
>
> With a degree in dance theatre from Laban and an MFA in Dance, Amanda had 15 years' experience as a specialist dance teacher. Her teaching spanned dance agencies, education programmes and dance lecturing at tertiary level. She also co-directed a professional dance company and performed herself. Within the research, Amanda was teaching a weekly Year 6 term-long project in an inner-city London primary school.
>
> Kate had taught dance for 20 years, 8 of which she had spent raising her three children. With a Bachelor of Humanities in Art/Dance and a Post Graduate Certificate in Performing Arts, she had worked in a number of community dance worker roles before working for the Laban Education and Community Programme, and lecturing in dance at a London Further Education College. During the research, she was teaching ongoing Saturday creative dance classes at Laban for 10–11 year olds. (Chappell, 2007b, p. 43)

It was suggested by Chappell that these individual developmental uniquenesses shaped each expert's pedagogical expertise distinctively, endowing each one with a unique way of successfully addressing dance teaching for creativity. For instance, although all three participants utilised voice and knowledge, each one found her own way of balancing aspects of collective and personal voice and compositional and craft knowledge (Chappell, 2007b). Findings from this study (Chappell, 2007b) suggest that rather than teachers searching for the one solution in teaching for creativity, they could explore other ways of finding functional and individual solutions. Similar to Cairns (2010), Chappell's (2007b) study focused on investigating expert pedagogical practice– although not on its acquisition. Thus, although both studies are important because they suggest that individuals' interactions with environmental variability constitute a significant factor shaping teachers' pedagogical expertise, they did not focus specifically on how dance teachers acquired their pedagogical expertise. Studies from sport expertise (Araújo, et al., 2010; Phillips, et al., 2010), which utilised the ecological dynamics and constraints-led approach to investigate expertise development, acknowledged that there might be many pathways towards expertise. These studies give further strength

to the notion of investigating the acquisition of pedagogical expertise in dance from a constraints-led approach.

You (2009, p. 1) studied the teaching practices of a Korean expert dance educator (i.e., Ms. Lee) in a higher education context and found four characteristics regarding her teaching practice concerning beginners' dance classes: (1) reflecting and expressing students' lives through dance movements, (2) teaching beyond dance technique, (3) employing diverse teaching techniques in order to achieve diverse learning experiences, and (4) designing and implementing dance festivals and similar occasions for evaluating students' learning. The findings of this study exposed that the Ms. Lee's practice had a focus on students' learning and utilised a variety of teaching strategies. This suggests that having a student centred focus and exploring a range of teaching strategies may be important in the acquisition of pedagogical expertise.

Other details were shared in relation to Ms. Lee's developmental journey. For instance, it was reported that when Ms. Lee started teaching, she had a tendency to focus on teaching dance technique and precise skills in dance movements (You, 2009). Furthermore, it was reported that the focus on technique had its origin in her learning from previous teachers-that is, Ms. Lee started to teach the way she was taught. This is in line with the literature which has stated that beginner dance teachers focus mostly on teaching dance technique (Alter, 2000), and teach the way they were taught (Erkert, 2003; Fortin, 1993; Lakes, 2005). Subsequently, with experience, Ms. Lee reportedly changed her way of teaching from its being exclusively based on teaching technique, to being based on a holistic connection between mind and body, as reported by Ms. Lee: "My teaching focuses on the unification of body and mind" (You, 2009, p. 9). However, no justification was given from You (2009) as to why Ms. Lee changed her behaviour from having a focus on teaching dance technique to having a focus on a holistic teaching approach, concentrating on mind-body connections in students' movements.

In this case, the theoretical framework of ecological psychology may be useful for understanding Ms. Lee's behavioural changes. From this perspective, a possible explanation is that initially, Ms. Lee may have had a conception of body and mind as separate; therefore, she had a technique-oriented focus and possibly taught skills independently from the contexts in which they would be performed (Bailey &

Pickard, 2010). Ms. Lee's initial approach to teaching is aligned with the Cartesian idea, which focused upon the separation of body and mind (Sheets-Johnstone, 1992), and led to cognitive psychologists comprehending information as the link amongst the objective world and subjective representations of the world in the minds of individuals (Araújo & Davids, 2011; Heft, 2001).

A consequence of conceiving of mental representations as being in the mind of individuals, which has been observed to underpin the traditional beliefs about teaching movement skills, is that teachers then have a focus on teaching skills separate from the context of its performance(Bailey & Pickard, 2010). However, as reported by You (2009), behavioural changes occurred in relation to Ms. Lee's pedagogical practice in the way she progressed, from being technique oriented to having a focus on the individual as a whole. These changes may have emerged due to the ways she perceived and acted because as argued by You (2009):

> Upon examining the origin of the Korean folk dance, she noted that the dance came from daily life and human labor. Naturally, she perceived that teaching dance was not just teaching techniques. (You, 2009, p. 9)

The above excerpt suggests that it was the perception of "daily life" and "human labor" that instigated Ms. Lee's change in her teaching approach from "just teaching techniques" to adopting a holistic approach to teaching. From an ecological perspective, it is the perception of environmental affordances, such as "daily life" and "human labor", which shapes an individual's behaviour (Warren, 2006). Furthermore, Ms Lee's behavioural change appeared to be aligned with her setting of new pedagogical goals because, as stated by You (2009, p. 8), Ms. Lee's initial pedagogical goal was "to teach techniques"; yet, she later changed her teaching goal to "the unification of body and mind" (You, 2009, p. 9). Most probably, it was these changes in goal setting, in association with her perceptions of environmental affordances (Warren, 2006), that facilitated Ms. Lee' pedagogical behavioural changes–from focusing on technique, to being student centred.

As explained earlier, affordances have been described as opportunities for action (Araújo, et al., 2006; Fajen, et al., 2008; Michaels, 2003; Stoffregen, 2003) because, from an ecological perspective, they emphasise a functionalist approach to the understanding of human behaviour. In You's (2009, p. 7) example, Ms. Lee can be thought of as perceiving the environment and acting on her students (e.g., "she

was likely to explain the meaning and movements of the dance by comparing these concepts to the daily life of a human being". The above quotation suggests that Ms. Lee perceives the environment in relation to functionalities that she matches with her action capabilities; therefore, there is a degree of fit between environmental properties and Ms. Lee's capabilities for action. Supporting this explanation is You's (2009) report about Ms. Lee creating multiple and diverse opportunities for students to explore movement as can be read in the quotation below.

> The expert dance educator in this study provided a variety of places for learning dance beyond the regular classroom or dance studio. The students of the expert teacher thus had lively and vivid experiences that encouraged extensive and effective learning. (You, 2009, p. 16)

This illustrates how perception of affordances in relation to goal achievement (i.e., students' "unification of body and mind") facilitated Ms. Lee's pedagogical behavioural changes. Describing Ms. Lee's behavioural changes by utilising the concept of affordances to explain her behaviour, exemplifies the value of drawing on the theoretical insights of ecological psychology to understand the acquisition of pedagogical expertise in dance teachers, rather than drawing from cognitive psychology.

Previous research on dance pedagogy have utilised theories from traditional cognitive psychology (e.g. Enghauser, 2003; Krasnow & Wilmerding, 2015; Mainwaring & Krasnow, 2010; Matt, 2003) and, as previously discussed, this view suggests that learning processes occur solely in individuals' minds, rather than through the individual's interaction with the environment where learning occurs (Dunwoody, 2006). This logic of separating the individual from the environment has been observed to have led to educational gaps in dance (Bailey & Pickard, 2010; Batson, 2008). For instance, Bailey and Pickard (2010), in reference to processes of movement skill learning of young dancers, pointed out that the teaching of dance skills separate from the context of their application is common and deemed best practice in dance. Some practitioners still follow the traditional way of teaching skills, that is, via the implementation of technical drills with no link to the purpose of the skill, or to its contextual application. As a result, dance teachers, with the objective of transmitting content into learners' minds, neglected the connections between the environment and the learner; therefore, learners are unable to understand

what constitutes functional behaviour in relation to specific socio-cultural environments (Bailey & Pickard, 2010).

Furthermore, Andrzejewski (2009) in reference to the separation between learning skills and context argued that often, technique and performance in postsecondary dance curriculum are addressed as separate; as a consequence, students recognize them as unrelated and do not develop integrative skills. These two examples (Andrzejewski, 2009; Bailey & Pickard, 2010), suggest that the logic of separating the individual from the environment is negative for movement skill acquisition because those skills are learnt separate from the context of its application; therefore, movement skill learning is not functional.

To address limitations of theoretical concepts from cognitive psychology in relation to skill acquisition in dance, Bailey and Pickard (2010) proposed that processes of learning and skill acquisition should be understood within the contexts from which the skills are acquired through training and practice, rather than being "formulated in terms of a system of internal, intellectual representations that result from instruction" (Bailey & Pickard, 2010, p. 380). Within this view, skill acquisition cannot be conceived in terms of internal representations controlling behaviour because learning is not a matter of how information is processed into internal representations; instead, as argued by Bailey and Pickard (2010), learning a movement skill occurs as a result of a dynamic and complementary relationship between an individual's perception and action mechanisms pervasively mediated by the environment and the learner. For example, a limitation of the cognitive psychology approach in relation to ballet was the emphasis "on the 'correct' execution of skills, which are honed over many hours of practice" (Bailey & Pickard, 2010, p. 371). It was argued that, correct execution of skill is limited because even in superficial observations, inter-individual differences in movement execution could be verified between elite performers due to variations of:

> …height, weight, length of limbs, core control, centre of gravity, depth of bend before a jump, height of jump, timing, musical awareness, use of space, focus, breathing, the next movement, knowledge of technique, knowledge of the piece, knowledge of other dancers, confidence and so on. (Bailey & Pickard, 2010, p. 371)

Furthermore, intra-individual differences were also reported by Bailey and Pickard (2010) as observable because of contextual uncertainties impacting on the individual during performance. They argued that, although an individual may have a certain degree of control over variables such as technical resilience, core stability, and the use of cues, music and space during performance, there will always be ever-changing contextual uncertainties that mechanisms of regulatory behaviour cannot address (Bailey & Pickard, 2010).

In response to the limitations of the cognitive psychology approach an alternative perspective for skill development based on four propositions was suggested by Bailey & Pickard (2010). First, skills are learned depending on an acquisition process; second, skills are aimed at achieving specific goals, not just technique; third, in order to develop skills, practice is required, although in combination with other factors; and fourth, skills can be developed over time in the attainment of expertise (Bailey & Pickard, 2010). Bailey and Pickard's (2010) argument was theoretically supported by Dreyfus and Dreyfus's (1986) theory of expertise, Bourdieu's (1977) theory of practice, and by Gibson's (1979) ecological and Bernstein's (1996) movement coordination ideas applied to the field of skill acquisition. Overall, Bailey and Pickard's (2010) suggestions are expressive of a mutuality between the individual and the environment and are aligned with previous studies within ecological dynamics and the constraints-led approach that account for weaknesses within the cognitive psychology approach to skill acquisition (Araújo & Davids, 2011; Davids & Araújo, 2010; Phillips, et al., 2010); therefore, they represent an alternative to the cognitive psychology approach to skill acquisition due to the focus on how functional and reciprocal relationships can be established between the individual and the environment in order to acquire movement skill.

2.4 PEDAGOGICAL EXPERTISE ACQUISITION IN MOVEMENT-BASED AESTHETIC ACTIVITIES

Pedagogical expertise has been studied in other activities–for instance in artistic gymnastics, aerobic gymnastics, synchronized swimming and diving, which are comparable to dance in that they include movement aesthetics as part of their accomplishment. However, a review of the literature on the acquisition of pedagogical expertise identified that little research has been conducted in movement based aesthetics activities teachers or coaches pedagogical development. A few

exceptions of movement based aesthetics activities that explored the acquisition of pedagogical expertise are diving and artistic gymnastics. The analysis of the pedagogical development of coaches in diving and dance exposed similarities concerning the acquisition of pedagogical expertise; therefore, the acquisition of pedagogical expertise of coaches from diving and artistic gymnastics, was explored as examples of movement based aesthetic activities that could contribute to enhance the understanding how pedagogical expertise is acquired. The following section briefly examines pedagogical expertise acquisition in the abovementioned movement based aesthetic activities.

In artistic gymnastics (Irwin, Hanton, & Kerwin, 2004) and in diving (Dixon, Lee, & Ghaye, 2012a), important features such as the existence of individual pathways and the multidimensional nature of coaches' knowledge were acknowledged in reference to coaches' pedagogical expertise acquisition. Furthermore, other significant factors were identified and ranked according to their importance. In British gymnastics, the most important factor identified as a source of coaches' knowledge was mentorship; the second, exploration; and the third, previous experience as an expert performer (Irwin, et al., 2004). It was suggested that experts' knowledge acquisition was essentially facilitated through specific interactions between the individual and the environment, such as peer and mentorship interaction (Irwin, et al., 2004). These interactions were reported as having a critical role in the development of expertise while other factors, such as previous experience as an expert performer, coaching courses, coaching manuals, videos and observations, were mentioned as less important (Irwin, et al., 2004).

Individuality also appeared to play an important role in gymnastics–for instance, when faced with a problem, expert coaches would try to find their own solutions because "… participants felt that they had sufficient experience and knowledge to work through most situations." (Irwin, et al., 2004, p. 434). However, although problem solving skills appear to be a common characteristic among coaches, inter-individual differences were noted amongst them. For example, access to peers was treated differently between coaches. Foreign coaches were perceived as a valuable resource to a number of gymnastic coaches; and so British coaches would travel to observe foreign peers in action. However, access to foreign coaches was not

valued by all coaches, maybe due to coaches' language barriers, as a number of coaches spoke several languages while other coaches did not.

Another point acknowledged in Irwin's (2004) study was related to the use of coaching manuals as they were considered important by gymnastic coaches, as an initial source of knowledge; however, manuals were also classified as being of poor quality, too complex, or not being readily accessible. In addition, it was also pointed out that coaches needed to adapt the information from the manual to suit practical needs, though not all coaches had this ability. The individual's ability to speak many languages and utilise manuals appear to have acted as individual constraints facilitating (1) access and interaction with foreign coaches; and (2) the capability of adapting the manual's information to suit practical needs. These behaviours towards interacting with foreign coaches and adapting the gymnastic manual to satisfy her or his own needs exemplify how individual constraints might have influenced British gymnastics coaches' processes of expertise acquisition.

In diving, Dixon and colleagues (2012a) tried to understand how a coach of a World champion acquired knowledge in order to be effective at elite level. The coach's pathway to pedagogical expertise was described as nonlinear, individual, and mentors were perceived as very important. Furthermore, it could be noted that the coach's attunement to particular sources of information influencing teaching was also considered critical, as reported by a participant coach: "Technique and mechanics are very interlinked, so learning how it works mechanically so you have a full understanding of exactly what it is you are trying to achieve I think is massively important." (Dixon, et al., 2012a, p. 342). However, the critical sources of information reported in assisting coaching education were different between diving and gymnastic coaches. The diving coach mentioned a preference for formal education (i.e., a degree) in order to support teaching and training, while the gymnastic coaches did not find formal education essential. These inter-individual differences suggest that individual constraints have a significant influence on individuals' action and consequent expertise acquisition (Davids, et al., 2015; Seifert, et al., 2013). These individual differences reflect the role of individual constraints in acquiring expertise, and are aligned with previous studies showing that expertise may follow individual pathways (Araújo, et al., 2010; Durand-Bush & Salmela, 2002).

2.4.1 Links Between Dance, Diving, and Artistic Gymnastics

In light of the review of these movement-based aesthetic sporting pursuits, a number of links can be established between expert practice in dance, diving, and artistic gymnastics. For instance, in diving, at an elite level, training needs to be suited individually (Dixon, Lee, & Ghaye, 2012b); however, occasionally, coaches might require expertise from different areas (e.g., strength training), and in these cases, expertise is outsourced from other fields (Dixon, et al., 2012a). Indeed, outsourcing experts is a common strategy to improve practice in diving and dance– for instance, at a professional level, it is common for experts from different dance genres and movement based practice, such as yoga and capoeira, to be invited into the company to teach specific techniques (Monten, 2008).

Furthermore, similar strategies have been reported in universities, where guest teachers introduce diverse dance movement styles and techniques (Stock, 2004). Additionally, anecdotal examples exist suggesting that artistic gymnastic coaches may engage dance teachers in order to facilitate learning of specific dance skills (Chen, 1990). The analysis of these cases suggests that the interaction of coaches with experts from other fields to acquire specific knowledge or skills is important because it has an impact on coaches' pedagogical knowledge and skill development. Experts from other fields act as an environmental constraint in the acquisition of expertise in both dance and diving, which suggests that interaction with peers seems to be important for pedagogical development.

Another similarity, as recognised in dance (Bales, 2008), diving (Dixon, et al., 2012b) and artistic gymnastics (Irwin, et al., 2004), concerns how specific geographies, including different practices from different places, may impact on the acquisition of pedagogical expertise. For example, it was reported by a diving coach that:

> ...the opportunity to go to places like China and Russia and see what they do and watch what they do and film what they do and bring that home and utilise it here and discuss it with the other coaches and discuss it with people from other countries as to what they do and how they develop and how much time they spend on things. I think that's essential. (Dixon, et al., 2012a).

The above excerpt suggests that perceiving coaches' practices in "China and Russia" was beneficial to participant coaches in Dixon's study because they could

bring back knowledge and apply it. Furthermore, it suggests that the study participants' perceiving of others' practices facilitated discussion with peers about the practices that the Chinese and Russian coaches did differently from the British coaches, as could be observed in one coach's statements: "What they do and how they develop and how much time they spend on things". To this extent, the participant coach in Dixon and colleagues' (2012a) study reported that it was essential for his learning to observe foreign peers, record it in video, and then discuss those practices with other peers national and international. Similar activities in relation to the influence of different geographies have been reported as being influential on dance teachers' development (Koegler, 1987), for example, ballet teachers from Russian travelled to China to assist the development of ballet in China, as a result, the production of expert ballet teachers was enhanced in China (Wulff, 2008).

With reference to the use of manuals, although in artistic gymnastics a number of coaches considered them of poor quality and not useful for practice, other coaches considered manuals important as initial sources of knowledge (Irwin, et al., 2004). In dance, manuals have been given importance, particularly in the case of ballet, where they provide specific rules which are not open to individual adaptations (Morris, 2003). It was explained that rules in ballet training manuals (e.g., Glasstone, 2001; Vaganova, 1969) constitute the foundations on which ballet technique is built (White, 2009); therefore, manuals are considered important by ballet teachers.

The influence of previous experience as an expert performer in acquiring coaching expertise was given little importance in diving (Dixon, et al., 2012a) or in artistic gymnastics (Irwin, et al., 2004), although in diving Dixon and colleagues (2012a) interviewed only one expert who did not reach an elite level of performance. On the other hand, in artistic gymnastics, only 45% (N = 16) reported that previous experience was an important factor in acquiring coaching expertise (Irwin, et al., 2004). However, it is not clear if participants in Irwin and colleagues' (2004) study had, or did not have, previous experience as elite performers; therefore, the analysis of the above studies suggests that the supposition that it is necessary to be an expert performer in order to become an effective dance teacher, remains inconclusive.

2.5 SUMMARY AND IMPLICATIONS

This literature review has examined pedagogical expertise in dance and discussed limitations concerning its acquisition. Limitations concerning the acquisition of pedagogical expertise in dance have arisen largely through dance teachers' replication of previous teachers' behaviours (Fortin & Siedentop, 1995; Kimmerle & Côté-Laurence, 2003; Lakes, 2005) and from the tendency of the dance discipline to associate teachers' quality directly with expert performance (Fortin & Siedentop, 1995; Warburton, 2008). In general, the literature on pedagogy has proposed many strategies to improve dance teachers' education, however, the large majority of these proposals were based on traditional information processing theory (Bailey & Pickard, 2010; Batson, 2008) and within the theoretical framework of cognitive psychology (Anderson, 1990). This latter approach can be viewed as limited because of its exclusive focus on the individual, neglecting important ecology-influencing behaviour (Dunwoody, 2006). In contrast, from an ecological perspective, it is important to understand how individuals under the influence of constraints are able to function effectively (Araújo, 2007). It is also important to understand how they acquired their expertise (Araújo, et al., 2010; Phillips, et al., 2010). For this reason, it is proposed that the constraints-led approach, supported by the ecological dynamics theoretical framework, be the means to study dance teachers' acquisition of pedagogical expertise.

The study of pedagogical expertise in dance has not received much attention from researchers, although a few exceptions can be identified (Cairns, 2010; Chappell, 2007b; You, 2009), which, however, focused on pedagogical expert practice, not on the acquisition of pedagogical expertise. Furthermore, the constraints-led approach has been previously utilised in dance by Torrents and colleagues (Torrents, Castañer, et al., 2008; Torrents & Castañer, 2009; Torrents, Castañer, Dinušová, et al., 2013; Torrents, Ric, et al., 2015); however, not in relation to the study of the acquisition of pedagogical expertise. As a result, such a multidisciplinary theoretical framework has been lacking in dance pedagogy; therefore, this study aims to investigate the influence of constraints in the acquisition of pedagogical expertise of dance teachers. The following section explains the methodological decisions and procedures of this study.

Chapter 3: Methodology

This chapter describes the rationale behind the choice and uses of particular methods in this research project, which aims to investigate the influence of constraints in the acquisition of pedagogical expertise by dance teachers. The first section of this chapter presents the research's theoretical perspective and research questions; the second section describes the role of the researcher; the third section provides information concerning the participants in the study; and the fourth section discusses the ethical considerations of the research project. Methodology relates to the overall research strategy, plans for action, and design and it supports the choice and use of specific methods to achieve the intended results (Crotty, 1998). The choice of a methodology and methods reflect the researcher's belief that these methodology and methods are suitable to answer the research questions and are consistent with the theoretical framework (Creswell, 2013).

3.1 THEORETICAL PERSPECTIVE AND RESEARCH QUESTIONS

Previous research on dance pedagogy has suggested that a limitation in traditional educational processes of dance teachers is the tendency to replicate previous teachers' teaching behaviours and strategies (Dragon, 2015; Erkert, 2003). This tendency, as previously discussed, appears to have resulted in dance teachers exhibiting non–effective teaching behaviour due to their lack of knowledge of pedagogical goals (Warburton, 2008), their lack of reflection about learning and teaching processes (Fortin, 1993), and to their focus on teaching technique (Dragon, 2015; Morris, 2003). However, further to the influence of previous dance teachers on current dance teachers, other studies have identified the influence of a range of constraints influencing on the acquisition of pedagogical expertise by dance teachers.

For example, Cairns (2010) suggested that physical location (i.e., one's place of living), family, and personal preferences for specific teaching strategies, could constitute potential constraints shaping expertise. You (2009) suggested that having a student-centred approach to teaching and utilising a diverse range of teaching strategies may be an important consideration. Finally, Chappell (2007b) and Cairns (2010) highlighted that individuals may have unique pathways towards the

acquisition of dance pedagogical expertise supported by their unique education, professional background, and life experiences. The potential constraints identified in these studies (Cairns, 2010; Chappell, 2007b; You, 2009) suggest that the acquisition of pedagogical expertise is complex and dependent on the way individuals interact with the environment. To this extent, the failure to consider the influence of environmental information represents a limitation to the understanding of how dance teachers may become effective (Bailey & Pickard, 2010; Torrents, Ric, et al., 2015).

One way to study complexity and individuals within their ecologies is through rich and in-depth qualitative studies (Hatch, 2002) because they constitute a suitable way of providing understanding of a given phenomenon, such as the acquisition of pedagogical expertise by expert dance teachers. In this sense, qualitative research is focused on gathering and studying rich description of phenomena in order to disclose the lived reality of individuals (Hatch, 2002). A characteristic of the field of qualitative research is that a significant number of studies utilize research inductive designs within grounded theory methods (Bryant & Charmaz, 2007; Miles & Huberman, 1994). Grounded theory may have different versions (Charmaz, 2002); nevertheless, its aim is to produce theory of the phenomenon that is emergent and grounded in the data (Charmaz, 2008). This represents a limitation in qualitative methodology because there might be other ways to explore and interpret the world in order to enhance knowledge. For example, a theoretically driven approach, such as ecological dynamics and the constraints-led approach (Seifert & Davids, 2015), utilising flexible methods such as interviews (DiCicco-Bloom & Crabtree, 2006; Guion, Diehl, & McDonald, 2001; Leech, 2002) and thematic analysis (Braun & Clarke, 2006), may create awareness of certain phenomena, their processes, and interpretation because it allows for qualitative research to explain pre-existing theory from a specific viewpoint (Miles & Huberman, 1994).

Furthermore, previous research in dance pedagogy has recommended exploring multidisciplinary research methods to investigate the complexities of learning and teaching (Bailey & Pickard, 2010; Minton, 2000; Torrents, Ric, et al., 2015). Aligned with the above rationale, the current research study utilised a qualitative methodology contained by a theory-driven research design. The multidisciplinary ecological dynamics theoretical framework, with a particular emphasis on the

constraints-led approach, was utilised to study the acquisition of pedagogical expertise of dance teachers.

The literature described a theoretical or conceptual framework as the system of theories, beliefs, concepts, and suppositions that supports and informs a research project (Maxwell, 2013); and theory driven approaches can be used in either qualitative or quantitative methodologies (Chen, 2005; Donaldson, 2012). A few examples of areas where theory driven approaches have been used are evaluation (Chen, 1990), education (Berman, 2013; Smyth, 2004), and health (MacFarlane & O'Reilly-de Brún, 2012; Walshe, 2007). The use of a theoretical framework is aligned with the philosophical basis of this research project, which links theory with practical aspects of the investigation. Therefore, the theoretical framework has implications for the different stages of the research process such as: framing the research design and questions; informing data collection and analysis; and bringing attention for action (Creswell, 2013; MacFarlane & O'Reilly-de Brún, 2012).

According to Smyth (2004), the theoretical framework can guide the literature review and provide links from the literature to the research goals and questions. In fact, theory development prior to data collection is a main difference between theory-driven and other qualitative approaches, such as grounded theory (Corbin & Strauss, 2008) or ethnography (Hammersley & Atkinson, 2007; Lincoln & Guba, 1985) According to Van Belle and colleagues (2010), the purpose of theory development prior to data collection is to provide guidance in determining what data will be collected and in framing analytic strategies.

There are a number of advantages and risks to be aware of when utilising a theory-driven approach; for example, an advantage is that a theory-driven approach provides a framework for making sense of specific data, which otherwise could appear irrelevant to the research questions (Maxwell, 2013). However, according to Maxwell (2013), one risk is that it is difficult for theory to accommodate all data equally, so some data may not fit with the theory. Secondly, another advantage of using a theoretical framework is that it illuminates particular phenomena and events that could go unnoticed or be misunderstood; however, on the other hand, there is a risk of leaving other phenomena and events unnoticed because no theory can illuminate everything (Maxwell, 2013). Finally, the third aspect to be considered is that a theory-driven approach facilitates the construction of knowledge limited by the

life experiences of the individual developing the research project (Smyth, 2004). Therefore, unconsciously or consciously, the theoretical framework informs an individual's reflection and practice by increasing personal sensitivity to perceive specific phenomena and events (Smyth, 2004); and this needs to be acknowledged by the researcher (Maxwell, 2013).

The theoretical perspective of a theory-driven approach is consistent with using specific data collection methods such as interviews. In this research project, interviews allowed the collection of rich data increasing the potential to identify particular events and circumstances in the life of participants that influenced the acquisition of pedagogical expertise. Using interviewing techniques represented a methodological advantage in the study of expertise because it allowed an in-depth analysis of participants' pedagogical pathways with a particular focus on the individual.

Interview data were analysed using the thematic analysis process proposed by Braun and Clarke (2006). Thematic analysis identifies, analyses, describes, organises, and reports patterns within data in rich detail, and an important characteristic of thematic analysis is that thematic analyses is not guided by a specific pre-existing theoretical framework (Braun & Clarke, 2006). Because thematic analysis is not guided by any theoretical framework, thematic analysis is a method of qualitative analysis that can be coupled to any theoretical framework, such as the constraints-led approach. Another characteristic of thematic analysis is that the researcher has an active role in identifying and selecting which themes may be more relevant to report. This active role of the researcher contrasts with other methods of qualitative analysis, such as grounded theory, where the themes "emerge" (Charmaz, 2008). Thus, according to Braun and Clarke (2006), within grounded theory the researcher may have a passive role during the process of thematic analysis.

According to Braun and Clarke (2006) when conducting thematic analysis it is important to determine the type of analysis (e.g., inductive/'bottom up' or deductive/theoretical) and the possible claims in relation to the data set. In this sense, the thematic analysis in this research project tended to be both inductive and theoretical. Supporting the decision to utilise both an inductive and theoretical approach is the idea that "researchers cannot free themselves of their theoretical and epistemological commitments and data are not coded in an epistemological vacuum"

(Braun & Clarke, 2006, p. 84). Therefore, while an inductive analysis is advantageous for the identification of themes linked to the data themselves (Patton, 1990); a theoretical analysis allows for the identification of themes from a particular perspective that otherwise could seem unrelated to the research questions (Maxwell, 2013).

An example of qualitative research, where processes of inductive and deductive thematic analysis coexisted, was developed by Fereday and Muir-Cochrane (2006) to interpret raw data collected during a doctoral research project focused on performance feedback within nursing. The methodology, originating in social phenomenology, included data-driven and theory-driven codes. Raw data was analysed inductively from interview transcripts. Afterwards, the analysis progressed towards the identification of central themes, guided by a theory of social phenomenology (Schutz, 1967, 1970, 1973), which captured the phenomenon of performance feedback in nursing (Fereday & Muir-Cochrane, 2006). Similarly, in this research project, both, inductive and deductive processes of interpreting raw data were used during thematic analysis. Supporting the capability of thematic analysis for both inductive and deductive analytic processes is its flexibility as a method, which is characterised by its having no rigid rules; therefore, different analytic combinations are possible to investigate the answer to the research questions (Braun & Clarke, 2006).

To analyse interview data concerning the influence of constraints on expertise, an inductive approach, would require one to read and re-read the data for any themes related to the influence of constraints on expertise and code distinctly, ignoring any previous research on the topic (Braun & Clarke, 2006). Hence, a consequence of the inductive approach would be, for instance, ignoring the influential research conducted by Araújo and colleagues (2004) and by Davids and colleagues (2015), which acknowledged the influence of constraints, such as information variables and task specific limitations, on sport expertise.

In contrast, after an inductive analysis generating data-driven codes, and guided by the constraints theoretical framework, a deductive analysis would allow the principal researcher to focus on specific features in the data, such as information variables or task limitations, while re-coding. In this thesis, an example of analysing findings inductively and deductively was the identification of specific ballet and

contemporary task rules influencing pedagogical development of dance teachers. Dance teachers following specific rules for teaching ballet, in opposition to other dance teachers following non-specific rules for teaching contemporary, were found to behave differently. As it is argued later, these differences in behaviour were interpreted as influencing participant's acquisition of pedagogical expertise. This example explains why and how in this research project, both inductive and deductive, approaches were utilised during data analysis.

While conducting a thematic analysis, the researcher may decide to identify themes at a semantic or latent level (Braun & Clarke, 2006). A semantic approach aims to identify themes at the explicit meaning of data and the process of analysis usually starts with description, where data is organised and summarised to show patterns in semantic content (Braun & Clarke, 2006), moving to interpretation where the researcher attempts to theorise the significance, meanings, and implications of the patterns (Patton, 1990). In opposition, a latent thematic analysis aims to examine and identify the underlying ideas and conceptualisations that inform the data; therefore, it goes further than the semantic content of the data (Braun & Clarke, 2006). In this research project, the themes were identified and analysed at a semantic level and the analysis of each participant's account revealed the influence of environmental, task, and individual constraints during her or his pedagogical development. Furthermore, it could be observed that the effects of a number of constraints were similar between individuals (e.g., mentors); however, cross-sectional analysis also exposed meaningful inter-individual differences (e.g., through each participant's interaction with her or his respective mentors).

The application of the multidisciplinary constraints-led approach in this study aimed to address two limitations in pedagogical dance research. First, it contributed to addressing the lack of multidisciplinary approaches in dance research (Bailey & Pickard, 2010; Batson, 2008); second, it contributed specifically to an understanding of the acquisition of pedagogical expertise of dance teachers. To this extent, it helps to fill gaps in dance teachers' development because, although the constraints-led approach has previously been explored in dance in relation to the influence of task constraints in the development of creativity (Torrents, Castañer, et al., 2008; Torrents, Ric, et al., 2015), choreographic creation (Torrents & Castañer, 2009), teacher instructions (Torrents, Castañer, Dinušová, et al., 2013), and arts teachers'

conceptions of creativity (Torrents, Casals, et al., 2015), the constraints-led approach has not been used to investigate the acquisition of pedagogical expertise by dance teachers. By addressing the two limitations mentioned above, this study is in line with that of Carter and O'Shea (2010), who argued that the openness of dance studies to other areas and disciplines, signals the maturity and existing vitality in the dance field.

Furthermore, while recognising that there are differences between dance and sport (Ingram, 1978), research has shown how connections between both areas can improve dance performance (Moyle, 2012) and dance teaching (Enghauser, 2003). Along the same line of thought, this study utilised the constraints-led approach previously exploited in the field of sport pedagogy (see Chow, et al., 2011; Davids, Chow, et al., 2005; Renshaw, et al., 2009) in order to examine how expert dance teachers acquired expertise in teaching.

Since the objective of the current research study is to explore how expert dance teachers acquired their pedagogical expertise under the influence of environmental, task, and individual constraints, specific research questions were formulated aligned with the above-mentioned objective. Ulin and colleagues (2004) emphasised how research questions should be determined by the research problem. It was suggested that research problems can be segmented within four different foci: the first is on people's experiences, action and behaviours; the second is on people's opinions and values; the third is on people's feelings or emotional responses; finally, the fourth is on what people know, or believe to be true in specific situations (Ulin, et al., 2004). The questions within this study were formulated in line with the first focus: to explore people's experiences, actions and behaviours. When framing the questions, it was taken into consideration that those questions needed to be focused, in order to define clear boundaries; and, at the same time, needed to be general enough to allow for exploration (Corbin & Strauss, 2008). As a result, the following questions and sub-questions were created to address the program of work.

Research question and sub-questions

How can we understand dance teachers' acquisition of pedagogical expertise from a constraints-led approach?

Which environmental constraints can be identified? What is their role?

Which task constraints can be identified? What is their role?

Which individual constraints can be identified? What is their role?

3.2 ROLE OF THE RESEARCHER

The role of the researcher in qualitative research has been increasingly recognised as influential to the point that there have been suggestions that "the researcher is the instrument of the research" and that separating research from other aspects of one's life may be a restriction to "a major source of insights, hypotheses, and validity checks" (Maxwell, 2013, p. 45). Maxwell (2013) further argues that the significant role that the researcher may have in the research project has traditionally been considered negative because the experiential knowledge that the researcher may bring to the research project has been considered as bias; therefore, traditionally, all personal influence should be eliminated from the research project. However, on the other hand, it has been suggested that in qualitative research, objectivity is a myth because while a researcher is trying to investigate and interpret a given phenomenon, her or his experiences and personal knowledge filter the information surrounding the phenomenon (Corbin & Strauss, 2008).

Within this perspective, the inclusion of one's individuality and experience in research activities has gained wide theoretical support because there is an increasing recognition that the researcher's attributes are part of the research interaction; hence, they can bring novel combinations and possibilities of phenomena (Olesen, 2011). As a result, the personal influence of the researcher is judged as valuable and as strength because it forms the basis on which the researcher builds her or his research, by equipping him or her with the perspectives and insights that shape the research project. Therefore, in this research project, the principal researcher acknowledged his background as a persistent student, teacher, educator, and researcher of dance and he makes no claim to be neutral to the research project because the construction of knowledge, in accordance with Smyth (2004), should not be restricted by the life experiences of the individual developing it.

However, although researchers' experiential knowledge should not be ignored, researchers cannot uncritically impose their assumptions and values on the research (Strauss, 1987). Researchers should utilise "critical subjectivity", a term that refers to:

> …a quality of awareness in which we do not suppress our primary experience; nor do we allow ourselves to be swept away and overwhelmed by it; rather we raise it to consciousness and use it as part of the inquiry process. (Reason, 1988, p. 12)

The application of critical subjectivity during the inquiry process led the principal researcher to actively adopt strategies such as reflection, discussions, and memo writings to examine personal assumptions and experiential knowledge with the theoretical framework and further relevant literature. For example, during data analysis, the principal researcher discussed the findings with supervisors and reviewed memos; these interactions with supervisors, data, and memos facilitated the principal researcher's critical reflexivity of data. These strategies allowed for interpreting findings from multiple perspectives and developing a personal sensitivity to important matters and occurrences in the data (Corbin & Strauss, 2008). While another researcher may be able to critique or take a different approach to the research problem at hand, the principal researcher has confidence that his experience, effort, and ability have allowed for discussion of and reflection on the research matter, deep and comprehensive analysis of it, and reaching a conclusion in this research project.

3.3 PARTICIPANTS

A mixture of convenience and purposive sampling (Patton, 2002) was used to select and recruit expert dance teachers, sourced through a higher education institution in Australia. Previous research recommended that to explore expertise it is important to study individuals representing the top performers in their domains and within their respective environments because expertise is context and domain dependent (Berliner, 2004; Bullough & Baughman, 1995; Gardner, 1995).

Supporting the relationship between expertise and context specificity is the argument that generalisations across different contexts may not be possible because effective teaching relates to acquiring specific contextual information critical for performance (Bullough & Baughman, 1995; Munby & Russell, 1989). Therefore, this rationale, emphasizing domain specificity, suggests that pedagogical expertise be studied within precise contexts (Munby & Russell, 1989). Other reasons to recruit and study experts are because they are known for: 1) having a specific purpose and for being committed to excellence (Simon, 1996); 2) exhibiting effective behaviour (Gardner, 2002; Janelle & Hillman, 2003); and 3) consistent achievement (Berliner,

2004). As a consequence, they can significantly influence others' learning and actions (Simon, 1996). For the above reasons, the current study investigated expert dance teachers directly by utilising interviews because this condition permitted the establishment of a straight relationship with the phenomena being studied.

A decision was taken to recruit expert dance teachers from a tertiary institution; nevertheless, an aspect that needed to be established was the criteria by which to define an expert teacher. To this extent, Palmer and colleagues (2005) suggested the following criteria to define an expert teacher: years of experience; social nomination-recognition; professional and group membership; and teaching performance. In addition, the teacher's environment was considered important because it can influence knowledge, skills and results (Palmer, et al., 2005).

Another aspect that needed to be established was the number of years of teaching experience needed for a teacher to be defined as an expert dance teacher. When considering years of experience, previous research has suggested that expertise is attained over a period of ten years of practice (Ericsson, et al., 1993) or 10 000 hr (Ericsson, Prietula, & Cokely, 2007); however, studies in chess have shown that the attainment of expertise, concerning the number of hours of practice, may significantly vary (Gobet & Campitelli, 2007). For example, a range from 3 016hr to 23 608hr (*SD* 5 538hr) in total practice accumulated, was verified for chess (Gobet & Campitelli, 2007). Furthermore, variability concerning practice time could additionally be identified in other sports. For instance, in skeleton, four athletes from a group of twenty six attained an elite level of expertise over a period of fourteen months (Bullock et al., 2009). To sum, the data analysed (Bullock, et al., 2009; Gobet & Campitelli, 2007) suggested that the attainment of expertise depends on the type of activity and on individual performance; thus, it can be concluded that the amount of deliberate practice can vary significantly for each individual (Tucker & Collins, 2012).

In general, in teaching, Berliner (2001) proposed that the time required to achieve expertise was a period of five years. However, because the criteria to define an expert teacher can significantly vary according to specific pedagogic contexts (Bullough & Baughman, 1995), and there is no definition that might fit every domain (Sternberg & Horvath, 1995), this study adopted criteria based on multiple studies. For the purpose of this study, the selection criteria adopted for qualification as an

expert dance teacher were: (a) a minimum of five years of professional experience as a teacher (Berliner, 2001); (b) the participant's social nomination-recognition status (Palmer, et al., 2005); and (c) peer recognition (Araújo, Cruz, & Almeida, 2009; Critien & Ollis, 2006). This set of criteria was used to justify the selection of the particular group of experts selected for this research project.

Participants' selection occurred during a two-phase process. The first phase involved the generation of two lists of potential participants by two academic supervisors highly recognised within the field of dance. Within the second phase, the two lists were merged into one, which constituted the final list. This list was then provided to the principal researcher who contacted participants for the study. Ten expert ballet and contemporary dance teachers were initially recruited for the qualitative inquiry: two participants were specialized in ballet, four in contemporary, and the remaining four had a mixed specialization in ballet and in contemporary dance (see Table 3.1).

Table 3.1

Overview of Number of Participants, Academic Background in Reference to Teaching Expertise and Data Generation Events

Number of participants	**Ballet**	**Contemporary**	**Ballet/Contemporary**	**Data generation encounters**
2	X			4 One-to-one interviews
4		X		9 One-to-one interviews
4			X	8 One-to-one interviews
Total: 10				19

Gender distribution of study participants included seven females and three males. All participants had experience as professional dancers, one in ballet, three in contemporary and six in both ballet and contemporary. Their years of professional practice as dance teachers ranged from 5 to 42 years (M = 30.3, SD = 12.22). Two participants did not provide their age, so, excluding those two participants, the age range of the remaining eight participants was from 34 to 64 (M = 48.87 years, SD =

10.27). After data collection and analysis, it was decided that there was sufficient information to answer the research question: "How can we understand dance teachers' acquisition of pedagogical expertise from a constraints-led approach", therefore there was no need to recruit further participants.

3.4 ETHICS AND LIMITATIONS

Ethical issues in the research design were analysed and discussed with supervisors. These issues included: strategies for recruiting participants; providing an informed consent form to participants; considerations about recording and storage of data; considerations about anonymity and confidentiality; providing incentives for participants; and any potential for emotional distress during interviews. Specific ethical procedures, as described below, were implemented before, during, and after data collection in order to maintain the integrity of the project.

Ethical approval from QUT Human Research Ethics Committee (see Appendix A) was obtained prior to data collection. Initial contact details and project information were provided through personal e-mails sent by the principal researcher to potential individual participants. This information included: a brief presentation from the principal researcher; the identification of the person who had suggested the interviewee's participation; a brief explanation of the research project with detailed information concerning time requirements for participants (two interviews and their expected lengths of time possible benefits to the participant; and a mention of the QUT Human Research Ethics Committee research project approval details. Further information was provided within an additional document attached to the e-mail, which included: details concerning the research team; comprehensive information about the project; expected benefits to participants; potential risks to participants; adopted measures to deal with potential risks to participants; privacy and confidentiality matters; contact details of the principal researcher, supervisors, QUT Ethics Department; and a statement of consent (see Appendix B).

Overall, all participants were informed about the nature and purpose of the research project (Miles & Huberman, 1994) and the invitation and consent forms were provided in advance. Therefore, participants had the opportunity to examine the information and to ask any questions or to clarify any concerns prior to the commencement of the research study. Participants were also informed that they

could withdraw from the project at any time and all participants completed and signed the consent forms, voluntarily, before the interviews (Miles & Huberman, 1994). All documentation and materials (e.g., audio files) were kept secure in a key locked private cabinet located at the principal researcher's workstation and in two external disks secured by a password. The names of participants and relevant parties were changed in order to maintain the integrity and usefulness of the research (Silverman, 2013).

Confidentiality and anonymity were ensured by implementing two strategies: (1) by changing participants' and relevant parties' real names for fictional names (Marvasti, 2004); and (2) by not disclosing participants' names to individuals outside the research team (Marvasti, 2004). Furthermore, even within the research team, composed of five individuals, only the principal researcher and another supervisor were aware of participants' identities. Additionally, to prevent potential identification of individuals from other information mentioned by participants, such as place of work, significant individuals, or residential address, this information was also disguised (Marvasti, 2004). For example, if a specific location called "Andromeda", was referred to by a participant (e.g., "I started to reflect about dance teaching while living in Andromeda", the name "Andromeda" would be replaced by a different name (e.g., Pyros); therefore, the participants' quotation would be altered to "I started to reflect about dance teaching while living in Pyros". Further consideration was taken in choosing names because aspects of information provided, such as specific locations or third parties, might convey important information for understanding the influence of constraints in the acquisition of pedagogical expertise. Therefore, real names or locations that were important for understanding how the findings could relate to the theoretical framework, were replaced with another name of the same scale and importance.

Additionally, when replacing participant's names did not confer enough information for contextualisation, further information was provided. For example, whenever participants mentioned locations, the procedure was to change the name and to provide extra information of the same scale and importance, for better contextualisation. For instance, if a place called Evora, a small city in Portugal, was reported, it would be replaced by a fictional name, e.g. "Pyros" and more details were included to provide scale and importance: "Pyros, a small traditional city in

Greece with a population of 200.000 habitants". When participants reported names of third parties, for example the name of an individual who was the director of a well-known dance company, the individual's name reported would be replaced with a fictional name and further details, such as job title, professional experience, location, and professional achievements, (e.g., Walker Taylor was the ballet master of a reputable professional dance company in Europe. He had plenty of experience as a teacher and as a choreographer. Furthermore, he created his own dance style known as the "Taylor technique".)

Due to deadlines and managing large amounts of data, there was a need to hire five individuals to transcribe data from audio interviews. These individuals were informed that this research involved questioning individuals about sensitive issues and they were required to sign a confidentiality form (see Appendix C) agreeing to keep all information related to this project confidential. Transcribers were required: not to disclose the research projects' information to any person and to preserve the project's data in a safe location away from unauthorised persons. All transcribers signed a confidentiality form before initiating transcription activities and followed specific instructions on how to transcribe. In total, the principal researcher transcribed nine interviews and the remaining ten interviews were given to undergraduate students.

3.5 SUMMARY

This chapter described the methodology and use of particular methods in this research project with the aim of investigating the influence of constraints in the acquisition of the pedagogical expertise of dance teachers. In the first section of this chapter, the theoretical perspective explained the rationale supporting the choice of a qualitative theory-driven approach as well as flexible methods, such as interviews and thematic analysis. Furthermore, it was explained that the research questions were formulated with a focus on understanding participants' experiences, actions, and behaviours. The second section described the role of the researcher and it was acknowledged that the principal researcher's individuality was part of the research interaction because an individual cannot be neutral to its own life experiences. The third section provided information about the participants in the study: the criteria for their selection, the recruitment processes, and participants' information. Finally, the

fourth section discussed the ethical considerations as well as the limitations of the research project.

Chapter 4: Methods

Methods are the techniques and/or procedures utilised for data collection and analysis in relation to answering the research questions (Crotty, 1998) and it is important that the chosen methods are compatible with the research project's goals (Creswell, 2013). This chapter describes the choices of particular methods in this research project and measures them to ensure trustworthiness (Guba, 1981). The first section of this chapter describes trustworthiness; the second section presents and justifies the instruments used in the study; and, the third section discusses how the data was collected and analysed.

4.1 TRUSTWORTHINESS

Trustworthiness is important in qualitative research to assess the value of a research study (Lincoln & Guba, 1985). Several measures, as suggested by Guba (1981), were taken to ensure data trustworthiness and the criteria of dependability, confirmability, transferability and credibility.

Credibility

Credibility addresses the criterion of internal validity: that the study measures what it is intended to measure (Merriam, 1998). In that sense, the study intends to match the participants' construed realities with the realities represented by the researcher (Guba & Lincoln, 1989). To ensure credibility, Shenton (2004) proposed the adoption of: well-established research methods; random sampling of individuals; triangulation; tactics to help ensure honesty; iterative questioning; researcher's reflections; the provision of information, with detailed descriptions, about the background and experience of the investigator; and an examination of previous research findings.

In line with Shenton (2004), the first phase of this study has incorporated well established methods for conducting both interviews (DiCicco-Bloom & Crabtree, 2006; Guion, et al., 2001; Kvale, 1996; Leech, 2002) and thematic analysis (Braun & Clarke, 2006). During the second phase, a theory driven approach was utilized, also in accordance with previous empirical studies (Fereday & Muir-Cochrane, 2006;

MacFarlane & O'Reilly-de Brún, 2012; Walshe, 2007) and the literature on theory-driven approaches (Maxwell, 2013).

Data triangulation was initially developed from earlier consultation with participants, from information publically available on the university's website, and from casual visits to the participants' workplaces where possible (Shenton, 2004). These visits were short and had the purposes of providing participants with hard copies of the study's information statements and consent forms, and later, of allowing the researcher to collect the signed consent forms. There was no prolonged physical engagement with participants, so the risk of undesirable side effects from prolonged engagement was reduced (Silverman, 2013). Familiarization processes provided a better knowledge of participants and supported data triangulation processes concerning participants' professional development (Shenton, 2004).

Different strategies were put in place to build rapport and ensure honest answers from participants. For example, the participants selected had no prior relationship with the lead investigator, and each participant had the opportunity to refuse to participate in the research project. Participants were informed that there were no right or wrong answers, or any expectations, from the beginning of the interview; hence, they were encouraged to be open and truthful. Interviews were conducted individually and, in accordance with participants' availability, in a quiet and private room that provided a relaxed and comfortable atmosphere for participants (Strauss & Corbin, 1998). The principal researcher followed strict interview guides, and took systematic field notes to minimize researcher bias (Kvale, 1996; Patton, 2002).

Information about the project and the investigator was provided to ensure credibility; furthermore, the independent status of the researcher was stated in advance. It could be observed during data collection that these measures facilitated participants' openness and contributed to their freedom in discussing ideas without fear of being compromised (Shenton, 2004). Finally, the principal researcher consistently reflected on the research project and evaluated its progression in close consultation with the supervisory team. Together, these procedures helped to ensure that only those who honestly wanted to be involved would participate; therefore the principal researcher had confidence that participants would offer genuine data.

Transferability

Transferability means the ability of the findings from one study to apply to other contexts or be generalizable to others (Merriam, 1998) such that in social research, it represents the potential for drawing inferences from a single study to wider contexts, populations, or social theory (Lewis & Ritchie, 2003). Transferability can additionally be referred to as external validity or generalisation of research findings, and Lewis and Ritchie (2003) described three types of related, although distinct, concepts of generalisation. The first, representational generalisation, addresses the question of whether whatever is found in a research sample may be generalised to the larger population from which the sample was drawn; the second, inferential generalisation, addresses whether or not the findings from specific research can be generalised to other contexts; finally, the third, theoretical generalisation, draws theory from the findings of specific research, for general application (Lewis & Ritchie, 2003).

In this study no assumptions were made of representational or inferential generalisation due to firstly, the small sample of participants (i.e., ten participants); and, secondly, due to the existence of specific Australian organisational and geographic contextual features influencing participants, which may not be present in other environments. However, theoretical generalisation is possible because even though the influence of constraints may vary they are present in every environment. For example, the environmental constraint ‘students’, with its associated ‘student feedback’, is evident in any teaching and learning environment; however, ‘student feedback’ may affect the development of a teacher’s pedagogical expertise, depending on the importance each teacher gives it, and on the environment in which the teacher works.

To ascertain potential theoretical generalisation, this study followed Lincoln and Guba’s (1985) suggestions for the investigator to provide sufficient data in order for the reader to make transferable assumptions. Shenton (2004, p. 70) argued that information provided should include:

a) the number of organisations taking part in the study and where they are based;
b) any restrictions in the type of people who contributed data;
c) the number of participants involved in the fieldwork;

d) the data collection methods that were employed;

e) the number and length of the data collection sessions;

f) the time period over which the data was collected.

Part of this information was described in other sections of this thesis (e.g., participants and data collection); however, it is reiterated here to provide a complete account and to give the reader detailed material to possibly compare results from this study with subsequent work conducted in similar circumstances (Gross, 1999).

This study took place in Australia and all participants were professional staff from a tertiary-level dance training institution (i.e., either full-time or sessional staff). From a total of ten participants, seven were female and three were male. Participants' years of professional practice as a dance teacher ranged from 5 to 42 (M = 30.3, SD 12.22). The age range of participants was from 34 to 64 (M = 48.87 years, SD = 10.27), which was calculated on the basis of eight participants because two participants did not provide their age. There were no particular restrictions on the type of participants, other than their having to be classified as expert ballet and contemporary teachers, and they were invited to participate because they represented the top professionals within their environment (Gardner, 1995). That is, participants were classified as expert dance teachers from a tertiary education organization in Australia and it was assumed that the phenomenon under study (the acquisition of pedagogical expertise of dance teachers) could be better understood and apprehended by studying these individuals.

Dependability

Dependability focuses on whether the investigation addresses changing conditions as well as the research design. These changes need to be tracked and properly recorded in order for the process to be reviewed and understood by third parties concerning decisions taken and interpretations (Guba & Lincoln, 1989). To this extent, examples of information recorded were: the research design and its implementation (i.e., a description of planning and accomplishments); the operational detail of data gathering (i.e., detailing what was executed in the field); and the reflective appraisal of the project (i.e. the evaluation of the effectiveness of the process of inquiry that took place) (Shenton, 2004).

The initial research design was focused on exploring gaps identified in the literature concerning two distinct, yet related topics. The first focused on the acquisition of pedagogical expertise and the second on maintenance of pedagogical expertise. The interview script included questions addressing both areas. However, after data collection and initial analysis, it was realized that there was a large amount of data collected. This was an unexpected outcome and it was then recognised that the remaining time for project completion was not consensual with the work required to complete the study on both topics. Therefore, due to time limitations, the research project changed its focus solely to the study of the acquisition of pedagogical expertise from a constraints-led approach.

Confirmability

Confirmability refers to the investigator's comparable concern with objectivity (Shenton, 2004); it addresses the matter of whether or not the findings, interpretations and conclusions are confirmed by the data and whether they lead to the implications outlined, rather than being a product of the investigator's imagination (Guba & Lincoln, 1989). To address the investigator's bias and add rigor to the investigation, triangulation processes were used in the research process (Denzin, 1970; Shenton, 2004). Denzin (1970) identified four methods of triangulation, such as methodological, investigator, theoretical, and data.

Methodological triangulation includes utilising more than one method to gather data; investigator triangulation includes utilising more than one investigator to gather and interpret data; theoretical triangulation includes utilising more than one theoretical position in interpreting data; finally, data triangulation includes using diverse sources of information to gather data. Within data triangulation, sources can be primary or secondary-for example, Decrop (1999) listed interviews and observations as primary sources; and documents such as textbooks, novels, promotional material, minutes of meetings, newspapers, and letters as secondary data. Furthermore, an alternative way to triangulate data is to write field notes during and immediately after interviews because these notes can bring attention to specific features that might not be directly perceived in the interview transcripts (Decrop, 1999).

In this research project, data triangulation was achieved by analysing participants' interview transcripts and cross-checking this data with field notes and

with participants' secondary data, such as Curriculum Vitae (CV). For example, if, during interviews, participants reported having many years of professional practice as a dance teacher, the verity of this data could be confirmed by analysing participants' CVs. Triangulation of CV's data was important to explicate findings in relation to the study's theoretical perspective (i.e., the constraints-led approach). To illustrate, an excerpt from Valentino's interview where he reports the influence on him of previous teachers and mentors within several locations is presented below.

> …when you ask how did I learn to become a dance teacher? That was, and, of course, during all this time, I had been exposed to many different teachers and ballet masters and mistresses in Milan and in Babenhausen and, to some extent, in Los Angeles. Well, certainly Walker Taylor in Los Angeles, and then, in Vienna, we had lots of different… Corey Nolan, Hector Rivas, Christiana Mejia. Lots of different teachers there, that I, one learns from.

In the above example, information from Valentino's interview transcript and his CV was utilised to illuminate and elaborate on research question, by confirming in his CV the names of significant others as well as the above-mentioned locations potentially influencing his acquisition of pedagogical expertise. Data triangulation, therefore, served the purpose of limiting the investigator's bias (Decrop, 1999).

Denzin (1970) described *within-method* triangulation as utilising variations of the same method while investigating a problem. Within-method triangulation was achieved by analysing and comparing each participant's interview answers, while they answered different questions, throughout different points in time. Participants' discourse was often complex, involving features such as events, individuals, or facts related to their pedagogical development; however, they would bring up the same features, at various points in time, during the interview when answering different questions. Upon data analyses, it was verified that these features were in agreement with each other. For example, Samuel, one of the participants, mentioned in his answer to the fifth question (You are considered an expert teacher in Australia and around the world; can you tell me a bit about the secret of your success?) that his second ballet teacher had a critical role in shaping his professional behaviour. This information was previously mentioned during his answer to the first question (i.e., 1. How did you start to dance?). The above example illustrates how within-method triangulation (Denzin, 1970) was implemented.

In short, data triangulation processes, involving analysis of interviews; field notes; and secondary data, such as participants' CVs, offered confidence that participants were able to recall truthfully several aspects concerning their development, even after many years had passed. These processes contributed to understanding and interpreting results in relation to the research question (i.e., How can we understand dance teachers' acquisition of pedagogical expertise from a constraints-led approach?) and to substantiating the study's validity. Additionally, as previously mentioned, detailed procedural descriptions were conducted, such as enquiry audits, which were conducted with the supervisory team (Guba & Lincoln, 1989). Furthermore, detailed records of the process in the form of raw data, field notes, and analytical diagrams were kept in order to keep a complete picture of all the process.

4.2 INSTRUMENT – INTERVIEWS

Previous research has suggested that if the researcher's aim is to reveal a given phenomenon that is not well understood, the approach should focus on the commonalities as well as on the particularities (Stake, 2003); furthermore, the researcher needs to be in close contact with the phenomenon studied with the intention of understanding the participant's world (Bogdan & Biklen, 2007). The above rationale proposed that the use of personal enquiry, in interview format, was a suitable method to obtain descriptions of individual experiences (Bogdan & Biklen, 2007) and to provide theoretical contributions to knowledge grounded in the meanings that life experiences hold for interviewees (DiCicco-Bloom & Crabtree, 2006).

In order to explore meaning, and gain a better understanding of life experiences concerning the acquisition of pedagogical expertise of dance teachers, individual, semi-structured, and in-depth interviews were chosen as data collection instruments because they encourage the interviewee to share rich descriptions of phenomena, whereas analysis and interpretation is conducted by the researcher (Saldaña, 2013; Warren & Karner, 2005). In-depth interviews are suitable for eliciting rich information from a small number of individuals because they utilise an open-ended discovery method, which allows deep exploration of the interviewee's personal perspectives and feelings concerning a specific topic (Guion, et al., 2001). According

to Guion and colleagues (2001), in-depth interviews should include the following characteristics:

Open-ended questions – Questions should be framed in a way that would invite interviewees to develop their answers, using their own words;

Semi-structured format – Key questions of the interview should be prepared in advance; nevertheless, the interview should be conversational with the interviewer following up on interesting issues from previous interviewee responses;

Seek understanding and interpretation – The interviewer should utilise active listening skills to reflect, interpret, clarify, and understand throughout the interview;

Recording responses – The interviewee's responses should be audio-recorded and complemented with the interviewer's field notes, which include observations of verbal and non-verbal behaviours, and the interviewer's personal reflections on the interview.

In-depth interviews therefore involve asking questions, recording and documenting responses to understand the data and investigate meaning. To this extent, there are a number of skills that the interviewer should develop, such as: being open-minded, flexible and responsive, patient, observant, and a good listener (Guion, et al., 2001). Being open minded means that judgement or criticism is to be avoided by the interviewer because if interviewees perceive that they are being judged or criticized, they may not feel comfortable in sharing their opinions and feelings. Flexibility and responsiveness are required because interviewees' responses are often unpredictable, so the interviewer needs to be capable of responding to unexpected situations in order to achieve the interview's goals.

Patience is necessary because interviewees may need to answer questions without obstruction and within their own time. Observant means that effective interviewers are usually capable of perceiving and picking up on subtle behaviour changes, such as facial expressions, body language, and tone of voice. Finally, good listener, means that the interviewer needs to be an active hearer and utilise strategies such as: giving full attention to the interviewee while waiting for the message to be received; paraphrasing, to check that the message received is the message conveyed;

and, “reflecting back to the speaker the emotions inherent in the message” (Guion, et al., 2001, p. 2), to gain a better understanding of the interviewee’s message.

According to Kvale (1996), before conducting the interview it is important to determine its purpose (i.e., what information one wants to know) and to design how the required information is going to be elicited. The purpose of designing an interview is to keep the focus on important topics, maintain consistency while interviewing all participants, and following a pathway during the interview. While designing an interview guide, three parts should be included: (1) the face sheet, which usually records the time, date, place, any special circumstances, and demographic information; (2) the interview questions, alongside a blank space for any written observations; and, (3) the post-interview comment notebook, which may include information concerning significant information, feelings, or interpretations (Kvale, 1996).

Following Kvale’s (1996) suggestions, the interview guide designed for this research project included a face sheet; the interview questions, with blank spaces for written observations; and, a post-interview comment notebook. An individual, face-to-face, semi-structured interview, comprising two main sections and respective subsections, was created in order to facilitate the exploration of individuals’ experiences (see Appendix D). Section one included the developmental pathway of participants since they first started to dance, with subsections focusing particularly on career progression. The questions addressed sources of knowledge, skill acquisition processes, influence of significant others, and events encountered during participants’ professional journey towards achieving pedagogical expertise. Section Two focused on the maintenance of expertise, with subsections on expertise components, the influence of constraints, and self-assessment. Overall, the questions focused on factors and events potentially affecting the acquisition of pedagogical expertise, such as sources and nature of information, and were ordered from easy to difficult because order may affect how the interview evolves and it also influences rapport (Leech, 2002).

4.3 DATA COLLECTION AND ANALYSIS

4.3.1 Data collection

Data collection methods involved using semi-structured interviews and an assembly of documentation related to participants' pedagogical expertise development (e.g., CV). Ten expert dance teachers were involved in data collection and nineteen interviews were conducted, two with each participant, with the exception of one participant that for personal reasons was only available for one interview. These interviews were conducted during the months of July, August, and September of 2013 according to participants' availability.

The principal researcher developed and implemented a systematic procedure for interviewing. At the beginning of each interview, he would start by introducing himself and reiterate the purpose of the study because, although each participant had previously received an email containing all information regarding the study, introductions and purposeful explanations contribute to relaxing the interviewee and gaining rapport (Kvale, 1996; Leech, 2002). Further to explaining the research project, permission was asked to record the interview. After gaining the interviewee's approval, the audio recorder was then tested to verify if it was working properly. The instrument utilised during interviews was an easy-to-use, battery operated, digital audio recorder with the sensitivity to capture every detail of the interview between the principal researcher and each participant. The quality of the audio files was good, which allowed for effective listening and transcribing.

An important part of the systematic procedure adopted by the principal researcher involved gaining interviewees' confidence. Developing rapport with the interviewee is critical for eliciting meaningful information during interviews because it implies that the interviewer is listening, understands the message, and is interested in the interviewee's stories (Leech, 2002). One aspect of the process of data collection that contributed to developing rapport with participants was the principal researcher's previous interviewer experience gained through his master's thesis research project (Rodrigues, 2008), coupled with the practice that he had had in conducting two pilot interviews with two unrelated expert teachers from the fields of design and media, respectively, to test the interview script. In the course of conducting in-depth, semi-structured interviews, he learned that it is important to

gain rapport rapidly because without rapport, the interviewee may answer questions only briefly, generating uninformed answers (DiCicco-Bloom & Crabtree, 2006).

One strategy to gain rapport was to make the introductory approach in a positive and friendly way, with the principal researcher smiling and developing an informal conversation engendered by his curiosity. Nevertheless, further to behaving in a positive and friendly way, there are other behavioural strategies. For instance, McCracken (1988) suggested that a possible behavioural strategy for the interviewer to gain rapport is to appear slightly unknowledgeable so that the interviewees do not feel anxious or threatened, especially when interviewing highly educated individuals, such as experts. Therefore, further to exhibiting a positive and friendly behaviour, the principal researcher was also professional and knowledgeable; nevertheless, less knowledgeable than the interviewee to prevent participants' feelings of wasting time or being threatened (Leech, 2002). For instance, the principal researcher has knowledge about pedagogy, dance, and expertise; nevertheless, he behaved in a way that appeared to have little knowledge about the above-mentioned topics. A benefit of this procedure was that interviewees did not feel threatened by the principal researcher; in contrast, they felt encouraged to report everything that could have been important for their pedagogical development because they did not assume that the interviewer already knew that information (Leech, 2002).

There are four stages of rapport: *apprehension, exploration, co-operation, and participation* (DiCicco-Bloom & Crabtree, 2006). The *apprehension* phase is characterised by uncertainty or insecurity because the interview context is usually strange and new for both interviewee and interviewer. In the apprehension phase, the principal researcher, in the role of the interviewer, followed the semi-structured interview inquiry form, which started with easy questions such as, "What is your personal background, and what are the experiences that led you to start to dance?" moving then to more complex questions, such as "How did you acquire your knowledge of teaching?"

Starting with easier questions about how participants started to dance contributed to developing rapport because the broad and open-ended character of the first question provided an opportunity for getting participants talking and simultaneously, it allowed for dealing with any initial apprehension arising from the new context for both interviewee and interviewer (DiCicco-Bloom & Crabtree,

2006). As responses were given by the interviewees, the principal researcher would follow with prompts, which, whenever possible, were repetitions of the interviewee's words to avoid leading the interview (DiCicco-Bloom & Crabtree, 2006). For example, during a given interview, Question Six asked for specific circumstances or events leading to the acquisition of teaching expertise. The interviewee (i.e., Veronica) reported that amongst other circumstances, "Feedback has contributed…". Then, while talking about "Feedback", she added that, "I have always asked people when they are doing that sort of thing". The words "Feedback" and "people" were judged as important by the interviewer because previous research on pedagogical expertise suggested that expert teachers are capable of linking learners' feedback to pedagogic objectives:

> Content-specific teaching knowledge, such as explanations keyed to specific student questions, enables the expert teacher to connect student feedback to lesson objectives, thus keeping the lesson on track (Sternberg & Horvath, 1995, p. 11).

However, Veronica did not state who these "people" were. Therefore, the interviewer decided to follow-up the interviewee's response with a prompt. The following excerpt illustrates the use of a floating prompt (Leech, 2002) in which the interviewer tries to clarify the interviewee response by asking a question, repeating the interviewee's words:

Interviewer: "So, who gives this feedback?"

Interviewee: "Students".

Interviewer: "Students".

Interviewee: "…students have found that… …they can talk about anything… …if you ask them a few specifics then they will give you that. They will actually respond to you. …talking to the class about what is that you are doing, and why you are doing it, and what it is you are trying to get from it. Because sometimes the explaining of what it is that you are trying to do, get the students to do, will help them find their own way there."

The above example illustrates how prompts were used to clarify the interviewee's answer without leading the interviewee because, as a result of the interviewer's prompt, the interviewee was encouraged to develop the explanation by

adding more detail in her own words (DiCicco-Bloom & Crabtree, 2006; Leech, 2002).

The *exploration* phase is characterised by the interviewee's engagement in an in-depth description allowing the interviewer to listen, learn, test and to establish "a sense of bonding and sharing" (DiCicco-Bloom & Crabtree, 2006, p. 317). The *co-operative* phase is characterised by a level of comfort where both interviewer and interviewee obtain satisfaction. Therefore, the interviewer may ask for further clarification, or may ask sensitive questions, and the interviewee may feel comfortable enough to correct the interviewer. The final phase is *participation*, which is characterised by a high degree of rapport, and occurs when the interviewee teaches or guides the interviewer (DiCicco-Bloom & Crabtree, 2006).

According to DiCicco-Bloom and Crabtree (2006), this stage may not occur frequently because it depends on the interview's timeframe or on the speed at which rapport is developed; however, it did occur during data collection. An example of the interviewee teaching and guiding the interviewer (i.e., the principal researcher) during an interview is presented. While responding to Question Six (i.e., Can you tell me more about specific circumstances or events leading to the acquisition of your teaching expertise?), the interviewee, Samuel, identified specific individuals and specific locations that contributed to his learning how to teach. Afterwards, he spontaneously verbalised beyond mere identification and described in detail how experiences with specific individuals influenced his knowledge acquisition and his becoming a dance teacher. The following excerpt describes the interviewee's verbalisation, illustrating the influences of significant others and of experiences:

> …we pass down our knowledge through the body and we pass down our experiences from others through the body. … The things that I have learned I have taken from John [the interviewee's dance teacher]. So, all this information keeps being passed down from one body to another body, from one generation to the next generation. Not through text books, not through video, through the body. … The experiences that I have had have informed who I am as a dancer and who I am as a teacher. …so, for me, what I have gained is not only the knowledge through the body from John, but, in formulating my teaching, and what has made me a teacher, is the experiences I have had with others as well, that have influenced and inspired me.

The principal researcher audio-recorded and wrote down observations during the interview and additionally registered his personal reflections after the interview (Guion, et al., 2001) regarding this part of the interview. Subsequently, the principal researcher's curiosity and reflection led him to investigate further data and literature in relation to significant others, such as previous dance teachers or mentors. This exploration led, for example, to the examination of lineage and legacy in dance education (Hagood, 2008b; Stinson, 2010), and exemplifies the interviewee guiding the interviewer (DiCicco-Bloom & Crabtree, 2006) because the interviewer learned that the acquisition of knowledge and becoming an expert dance teacher could potentially be influenced by experiences with significant others.

4.3.2 Data analysis

Data analysis, as exemplified in the above example of significant others, happened in parallel with data collection and was divided into two parts, inductive and deductive, each with its respective phases. During the first part, an inductive thematic analysis was immediately initiated after collecting data from the first interview, and it was developed while continuing to collect data and transcribing the remaining interviews. Upon conducting the first interview, the principal researcher started to perceive interesting patterns of meaning in the data. To further explore the data, he engaged in continual reading, searching actively for patterns and meanings. Furthermore, note writing and visual schemes were produced as an integral part of analysis, to develop mindfulness of all aspects of the entire data set (Braun & Clarke, 2006). Writing notes and creating visual schemes helped the principal researcher to become more familiarised with the data before beginning more formalised processes of coding.

One way to further familiarise oneself with the data is to engage in transcribing. Although transcribing processes can be time-consuming and sometimes even frustrating and boring, it has been suggested that the process of transcription is a critical phase of data analysis because it can facilitate enquiry and reflection (Bird, 2005). For example, an issue that facilitated enquiry and reflection was choosing conventions and modes of transcription practices such as:

> …naturalism, in which every utterance is transcribed in as much detail as possible, and denaturalism, in which idiosyncratic elements of speech (e.g.,

> stutters, pauses, nonverbals, involuntary vocalizations) is removed… (Oliver, Serovich, & Mason, 2005, p. 1)

Each method, denaturalised or naturalised, can be specific to explicit research questions (Oliver, et al., 2005); therefore, it was important to reflect on how each method could potentially affect participants and research goals. It was taken into consideration that a naturalised transcription is judged as more beneficial to researchers interested in "the intricacies of spoken language" and includes accents or involuntary vocalisation (Oliver, et al., 2005, p. 3). In contrast, a denaturalised transcript captures a "verbatim depiction of speech" and aims at accuracy in relation to the perceptions and meanings shared during a conversation (Oliver, et al., 2005, p. 4); however, it is not concerned with any accents or involuntary vocalization. Since the research's goal was not to investigate how one may communicate perceptions, but was to understand perceptions themselves, a denaturalised approach was judged as adequate to transcribe audio recordings of interviews.

Data analysis involved transcribing all interviews in a verbatim mode, following a denaturalized approach (Oliver, et al., 2005), with grammatical adjustments made to increase the flow of the text, if needed. Braun and Clarke (2006) stated that there is not a specific system to implement thematic analysis, which implies that there is not a specific system to produce a transcript. Of importance is that the transcript should preserve the information from the verbal narrative in a precise reproduction of its original nature (Braun & Clarke, 2006).

Data collected during interviews were substantial and, after transcribing five interviews, the principal researcher concluded that there was not sufficient time to transcribe all interviews within the research project deadlines. Therefore, in consultation with the supervisory team, it was decided to hire five individuals to help transcribe data from audio interviews. Outsourcing transcribers in order to meet deadlines is a process previously described and utilized in qualitative research (Oliver, et al., 2005). The current study followed a similar procedure to that of others previously; therefore, whenever it was not possible for the principal researcher to transcribe audio recordings of interviews, these were given to transcribers. Oliver and colleagues (2005) suggested that transcribers can be undergraduate students or professionals; therefore, in this study, due to financial and logistic limitations, undergraduate students were recruited. Nevertheless, the transcribers chosen had

previous experience gained through working for other research projects in university. Overall, the principal researcher transcribed nine interviews and the other ten interviews were given to undergraduate students.

A systematic procedure was implemented concerning transcriptions, whereby the principal researcher instructed the transcribers in how to transcribe. They were taught to structure the interview content in relation to the interview's numbered questions and they were asked to transcribe all information representing the speaker's words. Nevertheless, the transcribers were asked to follow a denaturalized approach (Oliver, et al., 2005), leaving out comments such as "er" and "hum". Furthermore, transcribers were also required to utilise conventions. For instance, they used brackets, inserted comments and indicated the time on the audio recording whenever they did not understand what was being said. If some parts from the audio recording were inaudible, transcribers were required to type "inaudible" and to state the time in parenthesis, for example, (inaudible, 13.15) (MacLean, Meyer, & Estable, 2004). Transcribers were also asked to identify the speaker as either the interviewer or the interviewee.

As a result, from these adopted conventions anyone reading the transcript would be able to recognise it as a conversation (Bird, 2005). Then, the principal researcher performed spot-checking (i.e., listening to the audio recording while reading the transcript) in order to verify the accuracy of the transcript (MacLean, et al., 2004). This process was on-going until finishing data collection; and, it could be verified at the end of the process, that using transcribers in combination with spot-checking (MacLean, et al., 2004) was an effective strategy because it allowed for the principal researcher to analyse and have a good sense of the data concurrently with data collection.

The coding process needs to capture the qualitative richness of the phenomenon (Boyatzis, 1998), and it should begin after reading, by familiarising oneself with the data, then generating an initial list of ideas and what may be important about the data (Braun & Clarke, 2006). Guided by the above ideas, in this initial phase, coding involved perceiving semantic content and the generation of themes that were data-driven across all the data set. Initial analysis was done with paper and pen. Subsequently, the principal researcher used NVivo, which is considered to be a useful software tool for qualitative analysis (Corbin & Strauss,

2008). Corbin and Strauss (2008) pointed out a number of benefits from using software tools for qualitative analysis such as: better management of data; fitting data into categories and reorganizing it; and the possibility for different ways of analysing data. Inductive analysis was the process used to detect, code and organize themes emerging from the data and quotations served as elements of investigation (Patton, 2002). The sources were grouped into similar themes and data were constantly compared and contrasted to allow categories and concepts to emerge (Patton, 2002).

Coding was performed by the principal researcher throughout all the data, and comprehensive and equivalent attention was given to all data. Interesting issues were identified in fragments of data to draw out raw data themes in the form of quotations from each participant. During this phase, the principal researcher coded as many potential themes as possible, keeping the surrounding data to preserve context (Bryman, 2001). Furthermore, while some individual extracts of data were coded exclusively into one theme, other individual extracts of data were coded into several different themes. After all data having been primarily coded and organised, an extensive list of various codes was obtained. The next step was to re-analyse all codes and sort them into potential themes, considering code's similarities and differences, and how they could be grouped forming main themes.

The process included creating visual representations of themes on paper, also known as thematic maps (Braun & Clarke, 2006), to facilitate the understanding of the different codes. The visualisation of thematic maps allowed reflection about the correlation amongst codes and themes within different levels; as a consequence, a hierarchy of themes with main themes and sub-themes, was created. For instance, the theme "expertise" had as sub-themes "components of expertise", "expert", "influences", and "personal". At this point, the principal researcher started to have a sense of main themes and sub-themes; however, themes were still being regrouped, separated, and refined. Categories and sub-categories of themes capturing the essence of the ideas being discussed by the participants were created using the NVivo software package (QRS NVivo 10); open coding (i.e., coding based on meaning emergent from the data) was initiated, followed by axial coding (i.e., coding aiming to identify relationships between open codes) (Saldaña, 2013; Strauss & Corbin, 1998).

After obtaining a set of potential themes, these themes were subjected to further analysis and refinement. In this stage, it became clear that a number of themes did not realise their potential because there was not enough data to support them (e.g., emotions). Other themes were joined to form one theme (e.g., "start dancing" and "start teaching" were joined under "development"); and other themes were separated (e.g., "significant others" was separated into "previous teachers" "role models", "family", and "students"). The rationale supporting theme refinement was to establish clear distinctions between themes by having coherent data within each theme (Braun & Clarke, 2006). In order to refine themes, all data extracts were reviewed within each theme to verify their coherence. In some themes, a few extracts of data were not coherent, so they were moved to other themes or they were discarded. After refinement at the level of themes, further refinement was conducted across all data sets. At this point, the second part of analysis (i.e., deductive analysis) was initiated where the validity of all themes was considered in relation to the whole data set and to the theoretical framework.

The second part of the analysis involved re-reading all the data set to verify if the themes would fit within the constraints-led approach (Newell, 1986) adopted in this study. In this phase, the constraints-led approach was utilised as a guide to deductively re-organise the data for subsequent interpretation. Before mapping the data into the theoretical framework, all themes were re-read to make sure that they were grounded in the original data (Fereday & Muir-Cochrane, 2006). Upon verification that the initial themes were data-driven, guided by the constraints-led approach (Newell, 1986), all themes were re-analysed according to environmental, task, and individual constraints. Further code reviewing and refining was conducted and some themes were individually re-organised under the main themes of environmental, task, and individual constraints, whereas the remaining themes were discarded because they did not have sufficient coherent data within each theme to support their inclusion in the theoretical framework. For example, themes such as: "lineage", "locations", "mentor", "peers", "role model", "teacher", and "students", were re-organised under the main theme, "environmental constraints"; whereas themes such as "art form", "faith", "comfortable", and "organisations" were discarded.

Coding allowed for the phenomena to be separated into diverse parts permitting a better understanding of the key features of each part. This understanding was used in order to make inferences as a whole (Corbin & Strauss, 2008). Deductive analysis was on-going across all the data set, until all the collated extracts for each theme were mapped into the constraints-led theoretical framework, forming a coherent pattern. Nevertheless, only a selection of quotations from within each data extract were included in the final analysis (Braun & Clarke, 2006).

Data analysis was continuous until the analytical process attained enough data in order to develop each theme's properties as well as in terms of interpreting variation. This process is known has reaching conceptual saturation (Corbin & Strauss, 2008). Furthermore, although data analysis is described as linear and sequential, the process was not linear; it was an iterative and reflexive process, involving continuous movement forward and backwards within all the data (Braun & Clarke, 2006). At the end of the deductive phase, an idea of the essence of each theme, with its associated data extracts, and how the different themes fitted together in the overall story, was gained, indicating that the data was clear.

The following table (see Table 4-1) includes the five themes resultant from inductive and deductive iterative processes, moving forward and backwards, within the literature of the constraints-led approach, expertise, and pedagogy. The inductive iterative process allowed for the extracts of data to be data-driven; subsequently, the deductive process allowed for data to be analysed in order to understand how themes could be related to theory from the constraints-led approach adopted in this research project. This way, the data was not forced into predetermined categories because the inductive approach allowed the creation of categories informed by the incoming data; and, the subsequent deductive approach, was informed through the fusion of theory and the collection and analysis and data in relation to theory (Layder, 1998). Therefore, it was the relationship between previous theory and data collection and analysis that facilitated the emergence of findings in relation to the above-mentioned previous theory. The definitions of categories were based on the general definitions found within the literature and serve the purpose of clarifying the themes.

Table 4.1

Themes and Definitions

Description	Definition
Mentor	A person who acts as guide and adviser to another person who is younger and less experienced ("mentor" In Oxford English Dictionary, 2001)
Role Model	An example or guideline setting out how a task or role is to be carried out ("role model" In Oxford English Dictionary, 2001)
Student	A person engaged in or dedicated to the pursuit of knowledge in a particular subject area ("student" In Oxford English Dictionary, 2001)
Rule	A principle, regulation, or maxim governing individual conduct ("rule" In Oxford English Dictionary, 2001)
Need	Something essential or very important ("need" In Oxford English Dictionary, 2001)

Before producing the report, the sub-themes, under the main themes "environmental", "task", and "individual" constraints, were further defined and named. Sub-themes and sub-sub-themes served the purpose of giving structure to complex themes and establishing the ranking of meaning in the data; and, the criterion for naming sub-themes was that they needed to be self-explanatory and precise. To illustrate a finding, under the constraints main themes (i.e., environmental constraints), was "students", which had as sub-themes "students' diversity" and "university students". The sub-sub-themes of "students' diversity" were "children" and "adults", and the sub-sub-themes of "university students" were "dance industry" and "students' feedback".

To produce the final report, it was taken into consideration that the write-up needed to be concise, coherent, non-repetitive and supported by sufficient data extracts to provide a logical account of the story. Data extracts were described according to a semantic analytic narrative describing the story of the data, and an interpretative analysis was conducted making claims to the theoretical framework as well as to specific literature focused on the thematic findings (i.e., mentors, role models, students, rules, and needs) wherever possible.

4.4 SUMMARY

This chapter described the rationale supporting the choices for specific methods in this research project. The first section of this chapter described trustworthiness and several measures such as credibility, transferability, dependability, and confirmability. The second section presented and justified the

instrument used in the study; individual, semi-structured, in-depth interviews were chosen as data collection instruments to explore and gain meaning from participants' life experiences concerning the acquisition of pedagogical expertise of dance teachers. Finally, the third section discussed how the data was collected and analysed.

Data collection and analysis were done in parallel, with data analysis being divided in two phases: inductive and deductive. This design allowed for data to have a voice (i.e., the findings were data-driven); subsequently, a theory-driven approach (i.e., the constraints-led approach) was adopted as a guide to deductively re-organise the data for subsequent interpretation. The inductive iterative process allowed for findings to be data-driven, while the deductive process allowed for data-driven findings to be analysed to understand whether themes would relate to the constraints-led theory. This research design allowed for the data to be free of coercion into predetermined categories because the inductive approach allowed the initial creation of categories to be informed by the incoming data, whereas the subsequent deductive approach was informed through the fusion of theory and the collection and analysis of data in relation to theory.

Chapter 5: Results and Discussion

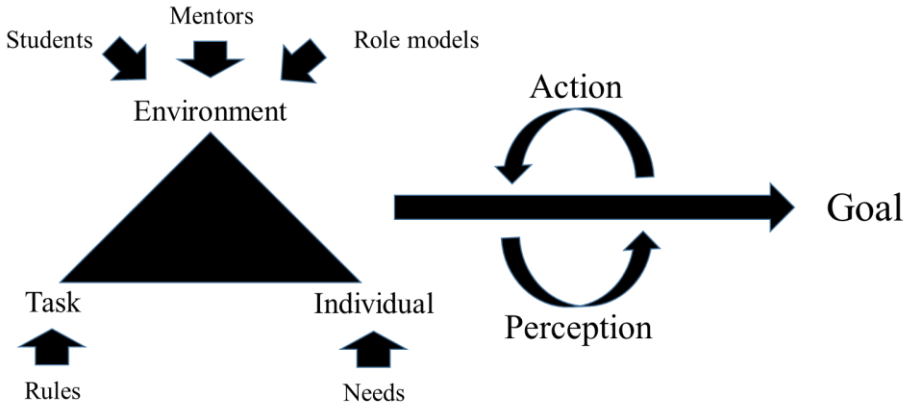

Figure 5.1. The interaction of constraints' categories, influencing dance teachers' behaviours and their acquisition of pedagogical expertise. Adapted from Newell and McDonald (1994).

The results and discussion section provides descriptions and interpretations of data from ten expert dance teachers from ballet and contemporary. The narrative includes accounts of experiences and events and accounts from significant individuals who have influenced participants' acquisition of pedagogical expertise. These accounts have been utilised to illustrate how experiences, events and significant individuals have engaged participants deeply, triggering individual responses which ultimately contributed to shaping pedagogical expertise.

Participants' reports were interpreted within a constraints-led approach and outlined, according to the findings, in three sections: environmental constraints (mentors, role models, and students); task constraints (rules); and individual constraints (needs), as shown in Figure 5-1. The findings were mapped into a table, (see Table 4.1.) and structured in distinct sections. Each section is instrumental in providing a better understanding of the findings by explaining separately the role of each specific constraint. However, as previously explained, expertise emerges from the interaction of ecological constraints during practice (Araújo, et al., 2010; Phillips, et al., 2010), so while each constraint is explained separately, it needs to be emphasised that constraints do not stand alone. Constraints need to be understood as a whole, affecting participants' acquisition of pedagogical expertise; thus, the interaction of constraints is described and discussed wherever necessary.

For reasons of confidentiality, privacy, and anonymity, participant's names, as well as the names of any other individuals referenced within the interviews in this study, have been changed. The practice of changing names was also extended to a number of locations and organisations mentioned by participants. Real names were changed in order to ensure that participants' identities, as well as those of other individuals described in this study, could not be known by readers. The results and discussion chapter will first describe environmental constraints, then task constraints; and finally, individual constraints are described.

5.1 ENVIRONMENTAL CONSTRAINTS

Environmental constraints, as previously stated, can be physical, social, and cultural; however, within the current research study, participants reported essentially social constraints–although as will be explained later, a number of social constraints may be affected by physical and cultural constraints, due to their interacting nature. Three environmental social constraints were reported by participants as having a major role during their pedagogical development; these constraints were classified as mentors, role models, and students and they are presented and discussed below.

5.1.1 Mentors

Within the literature, mentoring is generally associated with the function of providing guidance, information, and direction (Darling, 1986; Eby, Rhodes, & Allen, 2007; Galbraith, 2003); however, due to its application to a variety of settings, there seems not to be a commonly accepted definition of mentoring (Eby, et al., 2007; Jacobi, 1991). Some suggest that mentoring might occur in the simplistic form of advice being provided from a respected, more experienced individual to someone in need (Heller & Sindelar, 1991). Whereas others suggest that mentoring might be more complex, involving instruction, counselling, guidance, and facilitation from an experienced, recognised individual (Blackwell, 1989). Independently of what mentoring processes are, perhaps more important is to define what a mentor is. There seems to be a general agreement that a purposeful (Burlew, 1991), hierarchical relationship exists between mentor and mentee (Blackwell, 1989; Eby, et al., 2007; Galbraith, 2003; Jacobi, 1991) and with this in mind, Burlew (1991) classified a mentor as an experienced individual able to provide support, knowledge, and

guidance in relation to goal achievement. It was in this sense that participants reported having mentors.

Mentoring usually involves two individuals, the mentor and the protégé, and this relationship can be formal or informal (Chao, Walz, & Gardner, 1992; Eby, et al., 2007). Informal mentoring is characterised by relationships that develop without the intervention of a third party, and formal mentoring is characterised by relationships that develop officially with the intervention of a third party (Eby, et al., 2007). Furthermore, formal mentoring usually occurs within a specific time framework and, in contrast, informal mentoring tends to occur spontaneously, causing difficulties in identifying a specific time for relationship initiation (Galbraith, 2003).

The data revealed differences between participants concerning the time for mentorship initiation; nonetheless, in general, participants revealed having had more experienced mentors at the beginning of their professional teaching career, that is, during the first five years. All participants had a professional career as dance performers prior to becoming teachers, although only a few had initiated a mentoring relationship during their performing careers. Other participants had already retired from their performance careers when they initiated mentoring relationships.

Mentors were reported by participants as being experienced individuals, highly recognised in the dance field for their achievements as choreographers, educators, teachers or a combination of all these roles. Participants reported having admired and respected these individuals for their achievements as well as for their noteworthy status in their respective field of dance, ballet and/or contemporary. For instance, Oscar revealed that his mentor was well respected and active within the dance milieu.

> …he was a really respected member of the dance scene in Europe. An older man. He has done a lot of stuff.

Another participant, Marion, declared that her mentor was someone socially recognised within the national dance educational setting in Australia.

> Mary Bailey was really an instrumental person in developing dance education in Australia. …she became a real mentor to me… …she was really instrumental in developing my teaching…

Oscar and Marion's reports suggest that their mentors had had extensive experience and were respected in the dance setting. These reports are aligned with the literature that points to mentors as having had experience, being socially recognised, and knowledgeable (Hagood, 2008a).

Privileged access to knowledge was another reason reported by participants for establishing relationships with mentors; for example, as stated by Veronica, mentors were knowledge providers due to "their experience in teaching dance: their scope of knowledge and understanding". Furthermore, achievements and the mentor's artistic identity were also part of the basis for participants establishing mentoring relationships; for instance, Samuel mentioned admiring his mentor, an experienced artistic director from an international renowned dance company, for his personal style as well as for his choreographic and teaching achievements.

> …it was not until John Murray took over [the international professional dance company] as an artistic director. John was very conscious of maintaining a very strong … identity in terms of choreography. …But, John Murray was also one of the most inspirational teachers I have ever met. …we were all very passionate about John: his style, teaching, and choreography.

Samuel's statement, above, in reference to his mentor being "one of the most inspirational teachers… …we were all very passionate" also points to inspiration and passion as a rationale for establishing a mentoring relationship. Nevertheless, further to having mentoring relationships with experienced, well-respected, and socially recognised mentors, participants also described having engaged in mentoring relationships with peers during a later phase of their careers. This type of relationship developed when participants were more experienced teachers, and it would appear that peer mentoring relationships resulted from a professional relationship because the individuals involved in peer mentoring relationships were predominantly participants' professional associates.

Mentoring opportunities did not happen often for the participants following the commencement of their pedagogical development, in the 1970s, 1980s, and early 1990s. This scarcity of opportunity was recognised by participants; thus, the possibility of being mentored by experienced individuals was valued because it allowed for pedagogical and artistic development. It was this pedagogical and artistic

developmental opportunity that motivated participants to be fully engaged in mentoring relationships. The data revealed two ways of accessing mentors. First, a number of participants mentioned being selected by mentors; and second, a number of participants intentionally searched for mentors. These differences were due to specific participants' circumstances during each participant's career, which significantly influenced the way each participant initiated her or his mentoring relationship. These particular circumstances, including basis for and details of mentoring relationships, are described and discussed below.

Being selected by the mentor

Valentino mentioned that he met one of his mentors fortuitously during his professional career in a dance company. His mentor, Walker Taylor, was the ballet master of a European professional dance company and was socially recognised within dance circles; furthermore, Walker Taylor developed his own dance technique, the Taylor technique. It was while working as a professional performer in a dance company, that Valentino was invited by Walker Taylor to become his mentee, as can be observed in the excerpt below.

> I went to Babenhausen as a soloist… …and that is where I met Walker Taylor who was a teacher… …he suggested that I should go and study with him further, and operate a school... So, that was the motivation to go.... …to study further as a dancer …and also to find out about teaching.

The above excerpt suggests that Valentino was selected by Walker Taylor because he may have perceived in Valentino the potential to achieve two objectives: to improve as a dancer (e.g., "he suggested that I should go and study with him further"); and, as a teacher (e.g., "and operate a school"). Previous research on mentoring has shown that mentors in organisations might benefit from establishing relationships because of perceived high-potential of protégés (Lockwood, Evans, & Eby, 2007). For example, benefits for mentors might include better gratification for self, better job performance, leadership skills, and career (Ramaswami & Dreher, 2007). Achieving personal benefits might have been the rationale supporting Walker Taylor's establishment of an informal mentoring relationship (Eby, et al., 2007) with Valentino. However, informal mentoring relationships may differ from one another. For instance, Samuel's mentoring relationship was initiated differently from Valentino's mentoring relationship and it had a different purpose. Samuel was

selected to be part of a small group of mentees aiming to be choreographers, not dance teachers. Nevertheless, while a professional performer in a dance company, he developed concurrent choreographic and teaching skills due to his pluralistic role in his professional dance company; that is, Samuel had to teach, to choreograph, and to perform. Samuel's report below explains how the mentoring process developed from choreography through to teaching.

> …he [Samuel's mentor] selected who he thought would be good choreographers. "…it was a progression from choreography to teaching. …I was doing all three. I was still a full time dancer in the company. …we were mentored through the whole process.

Two features became evident from Valentino and Samuel's reports. First, the mentoring relationships were initiated by mentors who probably perceived Valentino and Samuel's potential abilities for activities such as teaching, choreographing, managing, and performing. Second, the role of teaching was developed in close association with other roles. For instance, Valentino learned how to teach, while developing performance and management skills; and, in a similar informal mentoring process, Samuel learned how to teach while developing choreographic skills. Such unions of roles were reported to happen frequently within dance schools (Lindqvist, 2001; Posey, 2002) and dance companies (Gilbert, 2005; Van Zile, 1985). For instance, the business focus of professional dance companies is usually on performance (Bronner, Ojofeitimi, & Rose, 2003); however, teaching might emerge as a collateral activity because it is functional to performance or because opportunities to teach might occur during tours or events (Gilbert, 2005). Valentino and Samuel's cases exemplify the role of mentors influencing pedagogical development under the influence of task constraints (e.g., performance and choreography) in dance companies because in their accounts both learned how to teach while immersed in a multiple-task environment. Samuel's report, for instance, suggests that mentoring involved tasks related to performance, choreography, and teaching and that he was "mentored through the whole process".

From a constraints-led approach, the acquisition of knowledge involves an individual's action in a specific environment (Araújo, Davids, Cordovil, et al., 2009). By acting in specific environments, individuals' processes of learning can be facilitated because individuals are exposed to key constraints that influence them

during their search for appropriate task solutions (Davids, et al., 1999). Exposure to constraints facilitates the perception of specifying information from these constraints that operate as system control parameters, helping to regulate action during goal directed behaviour (Davids, et al., 1999). This suggests that in Samuel's account, being exposed to performance, choreography and teaching task constraints through his mentorship, facilitated his perception of specifying pedagogical information that operated as system control parameters helping him to acquire and regulate his teaching behaviour. However, further the influence of constraints, behaviour regulation is dependent on the confluence of individuals' goals with their intrinsic dynamics because adaptive goal-directed behaviour emerges when individuals attempts to overcome constraints while reaching for a satisfactory solution (Chow, et al., 2011). This proposes that learning how to teach should have been aligned with both Samuel and Valentino's intrinsic dynamics and should have been a goal for them to achieve. However, learning how to teach was not a primary goal for either of them; for example, Valentino revealed that his goal was not to become a teacher; it was to improve as a performer.

> My motivation was certainly not to go and learn how to become a teacher. That happened as a by-product because we were attempting to run a school of dance. …my motivation was to learn more intensely my skill as a dancer, as a performer, with Walker Taylor.

Equally, Samuel mentioned that teaching was not his goal. His goal, while being a professional dance performer, was to become a choreographer. He only learned how to teach because teaching was included in his job portfolio alongside choreography and performing.

> The creation or choreography was the next driving force that I wanted to do. The next passion! So, my focus was on that…

Valentino and Samuel's reports indicate that while being performers, teaching was not their main goal. In general, in the case of most dancers, the preference for performance and choreography over teaching has, in fact, been acknowledged in previous studies focused on dance performers' professional careers (Jeffri, 2005). Jeffri (2005) provided evidence that teaching is not a preferred activity for dance performers, in contrast with choreography or performance. In an international study focused on transitions from expert performance, Jeffri (2005) stated that performers'

intention to teach was 2.6% for American dancers, 2.7% for Australian dancers and 10.7% for Swiss dancers. These low percentages provide evidence that teaching is not the preferred occupation for dancers. However, the type of work that ex-performers actually did, yielded much higher values for teaching (e.g. 71.3% for Australian dancers, 53.2% for American dancers and 68.6% for Swiss dancers) (Jeffri, 2005). In Jeffri's (2005) work, there was not a clear rationale concerning the paradox between the low number of performers interested in teaching and the high number of performers actually teaching.

To this extent, perhaps one explanation for this paradox could be the interaction between performers and mentors in dance companies because, as observed in Valentino and Samuel's cases, even if mentoring was primarily aimed at other goals (choreography for Samuel and performance for Valentino), the data suggests that teaching was simultaneously developed because it was included in their task portfolio. To demonstrate, Valentino's report above suggests that becoming a teacher "happened as a by-product" because he and his mentor were "attempting to run a school of dance". This suggests that it was the influence of interacting environmental (i.e., mentors) and task constraints (running [teaching] in a dance school) according to Valentino's account, which facilitated his pedagogical development. Samuel and Valentino are, therefore, examples of professional performers that were not primarily interested in teaching; nevertheless, through interaction with mentors during choreography, performing, and teaching tasks, their interest in teaching emerged.

Samuel and Valentino's accounts exemplify the role of mentors as environmental constraints, influencing the pedagogical development of performers in dance companies during the course of exploring choreography, teaching, and performance tasks. Constraints within choreography, teaching, and performance tasks were perceived as relevant sources of information and had arisen from the continuous interaction between Samuel and Valentino and their respective dance companies. In both Samuel and Valentino's accounts, adaptive goal-directed behaviour emerged when they tried to overcome constraints in order to reach a satisfactory solution to achieve the tasks' goals. These accounts are aligned with studies found in the previous literature that comparatively discussed the influence of mentors in shaping the professional behaviour of performers (Hagood, 2008a;

Mainwaring & Krasnow, 2010). For instance, the influence of mentors on performers is in line with Mainwaring and Krasnow's (2010) ideas that dance teachers, as mentors, are significant influences on performers or students because they represent the wider knowledge of the field. According to Mainwaring and Krasnow (2010), dance teachers are perceived as role models by students; therefore, teachers, as mentors, can provide a role model function by valuing the whole person with all its individual needs and differences. This highlights the fact that teachers as mentors have an important role in influencing individuals' development.

Furthermore, dancers' interactions with mentors aimed at pedagogical development are aligned with practices from other movement-based aesthetic activities, such as artistic gymnastics and diving. For instance, in gymnastics (Irwin, et al., 2004) and in diving (Dixon, et al., 2012a), mentors are perceived as very important sources of knowledge. This is similar to this study's participants' accounts, where mentors have also been perceived as important sources of knowledge. However, a difference between this study's findings and the findings from gymnastics and diving, is that although in gymnastics and diving peers were considered important for pedagogical development because they would provide knowledge about teaching and coaching practices (Dixon, et al., 2012a; Irwin, et al., 2004), peers did not have a mentoring role. In this study, mentoring did not encapsulate only the traditional mentoring relationship where mentors are experienced, recognised, and respected individuals supporting inexperienced individuals (Kram, 1996), but also the fact that participants had peers functioning as mentors. This aspect is presented and discussed in the next section.

Peers as mentors

Peer mentoring has been defined as an interactive relationship between individuals where both function as mentor and protégé and are mutually dependent (Driscoll, Parkes, Tilley-Lubbs, Brill, & Bannister, 2009). Peers, as mentors, can facilitate psychosocial career development and can offer alternatives, or complements, to traditional mentoring relationships (Dils & Stinson, 2008; Kram & Isabella, 1985). An individual can have sequential mentoring relationships (Baugh & Scandura, 1999) and several mentors simultaneously (Higgins & Kram, 2001). Participants mentioned having several individuals in the role of mentor, ranging from more experienced to less experienced. Marion, for instance, mentioned that alongside

her more experienced mentors, she also had a peer mentor. This peer mentoring relationship developed within the university setting because university requirements concerning academic research promoted the initiation of peer collaboration. To Marion, establishing a peer relationship proved to be important for her pedagogical development because it promoted the exchange of knowledge concerning her teaching practice.

> …Amelia [Marion's peer] and I, often, do research together… So, that collaborative kind of relationships is really important for keeping my teaching practice going, because the knowledge that we are getting from each other really feeds in.

Marion explained that the research that she conducted with Amelia focused on their teaching practice, which stimulated reflection about their own teaching practice and its effect on students' behaviour.

> …the research is about units that we are teaching in. So, it is actually reflecting on how we are teaching, and how those students respond to it, so it feeds back into it.

Marion's statements suggest that her relationship with Amelia was initially established within the framework of research collaboration concerning teaching interactions between themselves and students; and, it was only later that this relationship evolved into a peer mentoring relationship. It was the latest evolution, moving from research collaboration to peer mentoring, which had a deeper impact on Marion's teaching practice, as can be observed from the following excerpt.

> …between Amelia and I there is a particular relationship… …we research and write a lot together… …we have a two way mentoring relationship, where we mentor each other, that really affects how I teach.

The above excerpt suggests that the peer relationship between Amelia and Marion strongly influenced Marion's pedagogical reflection and teaching practice (e.g., "that really affects how I teach"). It would appear that in Marion's case it was the nature of research university tasks that inspired a peer mentoring relationship, which provided social support, information sharing, and feedback, and contributed to Marion's evaluation of her own teaching experiences. To this extent, research in higher education has suggested that job requirements often include the ability to conduct research (Ramsden & Moses, 1992) which can facilitate collaboration

between staff (Kezar, 2005). This appears to be in line with Marion's development because she reported that the foundation of her relationship with Amelia was research collaboration. This indicates that the causality of Marion's peer relationship was generated by the interaction of the university's task constraints concerning research, and of Amelia and Marion's common goals concerning research (e.g., "the research is about units that we are teaching in"). This is aligned with previous research in dance peer mentoring that suggested that having common goals concerning teaching and research allows the establishment of connections leading to solving specific teaching problems (Dils & Stinson, 2008). Through ongoing interactions involving sharing, responding, and non-hierarchical communication, individuals can realise commonalities, differences and learn how to create a mutually beneficial peer mentoring relationship (Dils & Stinson, 2008).

Dils and Stinson (2008) argued that traditional mentoring relationships are associated with providing vocational and role modelling support; in contrast, peer relationships provide social support, information sharing, and feedback, which contributes to peers' evaluation of their own experiences. This suggests that an important factor contributing to successful peer mentoring interaction is to acknowledge responsibility for how peers perceive and evaluate themselves. This evaluative functionality seems to be aligned with Marion's reports concerning her teaching practice (e.g., "…it is actually reflecting on how we are teaching… So, it feeds back into it"). Therefore, it can be inferred from Marion's account that university's research task constraints facilitated a peer mentoring relationship and, in turn, the peer mentoring relationship contributed to Marion's knowledge acquisition and to her reflection about her teaching practice outside the traditional view of mentoring (i.e., hierarchical). The fact that Marion's peer mentoring relationship lacked a hierarchical dimension, may explain the supportive role that peer mentoring relationships have because it is easier to communicate and collaborate with one another if there is no hierarchical relationship (Dils & Stinson, 2008; Kram & Isabella, 1985).

As previously mentioned, Marion highlighted the significant impact of environmental (i.e., peer mentoring), and task constraints (i.e., conducting research) in promoting reflection about her teaching practice; furthermore, she stated that peer mentoring facilitated knowledge acquisition which impacted on her teaching

practice: “that really does affect how I teach”. This suggests that, for Marion, the interaction of specific environmental (i.e., peer mentoring), and task constraints (i.e., conducting research) was beneficial to pedagogical expertise development. Marion reported having had different mentoring relationships, including peer and traditional mentoring within the dance field; and all contributed to the acquisition of her pedagogical expertise. However, further to having mentors within the dance field, other participants reported having had mentoring relationships outside the dance field. These relationships are explored in the next section.

Non-dance mentors

Participants reported having had mentoring relationships inside and outside the field of dance. Previous research has shown that individuals tend to learn from multiple behavioural models (Bandura, 1986) and can establish multiple mentoring relationships, within different settings, depending on their personal limitations (Eby, 1997; Higgins & Thomas, 2001). This is in line with participants’ reports describing the establishment of multiple mentoring developmental relationships. For example, Isabel reported having established mentoring relationships in the field of dance; however, she additionally reported having mentoring relationships in the field of education. These ‘external’ mentoring relationships occurred because Isabel teaches in both fields: education and dance. This particular circumstance offered Isabel the opportunity to have access to mentors from the field of education.

> Other mentors, outside of dance, are some very experienced teachers that I worked with at the school that I teach.

This example is similar to Marion’s account, reported above, in the sense that it demonstrates the impact of environmental constraints in establishing peer mentoring relationships. In Isabel’s account, it was the physical possibility of interacting with teachers from the field of education that afforded mentoring relationships. Mentors from the field of education appear to have functioned as role models (Scandura & Pellegrini, 2007); and, an example of role modelling from Isabel’s account concerned her acquiring of teaching skills concerning effective class management, which she lacked, as is evident in the excerpt below.

> They [Isabel’s mentors from the field of education] just have such a control over classroom; which, sometimes, I do not feel I have…

The excerpt above suggests that the opportunity to interact with mentors from the field of education might have facilitated Isabel's perception and learning of effective pedagogical strategies concerning controlling classes. Isabel reported that her mentor, from the field of education, suggested applying the same teaching strategies used in education, to dance.

> …she [Isabel's mentor] said employ what you teach and use, for dance. Those same strategies, put them into a mainstream [dance] classroom

Isabel tried to follow her mentor's advice connecting teaching strategies from education with dance teaching.

> …I am making the link between how I teach dance and how I teach at school, trying to find the middle ground and pull the two into together.

The above statement is demonstrative of the role of Isabel's mentor in guiding her exploration of transferring teaching strategies from education into dance; however, further analysis of Isabel's case suggests that transferring teaching strategies across different fields was not an easy task. For example, Isabel's statement: "making the link between how I teach dance and how I teach at school, trying to find the middle ground and pull the two into together" is demonstrative of her difficulties in applying teaching strategies from the field of education into the field of dance. Isabel shared her frustrations concerning achieving successful applications, as below.

> So, that is my work in progress, I am not there yet. It is very frustrating, it is very demoralizing, I have wanted to throw in the towels several times, but I think the challenge keeps pushing me back to work it out a bit more.

Her statement: "…making the link between how I teach dance and how I teach at school, trying to find the middle ground… … it is my work in progress."; suggests that the role of mentors is related to providing guidance (Eby, et al., 2007; Galbraith, 2003). As a consequence, the protégé (i.e., Isabel) might need to engage in extensive exploration of teaching tasks in reference to the specifics of each environment, education and dance, in order to successfully implement strategies from the field of education into the field of dance ("making the link"). From an ecological psychology perspective, an individual's behaviour needs to be understood in reference to a specific environment because action is supported by the information perceived from the environment, and, in turn, environmental information is acquired through action

(Gibson, 1986). For Gibson (1986) it is this coupling between perception and action that establishes a mutuality between the individual and the environment.

Isabel's report signalled that applying knowledge from one field to another was "work in progress". This "progress" might be demonstrative of the fact that she was in the process of detecting key affordances (Gibson, 1986) from two distinct environments: education and dance. Educational affordances might be different from dance affordances because, as previously stated, affordances refer to specific environmental properties and constitute information to support an individual's action (Gibson & Pick, 2000). Each environment, education and dance, has particular specifying and non-specifying information. Specifying information is relevant and constrain behaviour; non-specifying information concerns less relevant information (Jacobs & Michaels, 2002).

This conceptualisation of affordances signifies that they are always present in the environment (Gibson, 1986); however, some affordances might be easier to detect than others because detection of some affordances might require periods of exploration and practice before effective action is achieved (Gibson & Pick, 2000). The time required for exploration and practice might explain Isabel's struggle in applying knowledge from education into the field of dance because it is only after a period of exploration and practice that learners are able to educate their attention converging into specifying information (Jacobs & Michaels, 2002). To conclude, Isabel's account suggests that although the interaction with mentors from the field of education may be difficult and complex because it may involve teaching in an environment different from the dance environment, it may actually be beneficial for the acquisition of pedagogical expertise because the exploration of teaching practice can result in an improved coupling of perception and action mechanisms through learning.

Content of mentor-protégé relationship

The benefits of establishing mentoring relationships in the workplace have been associated with enhanced psychological health, positive attitudes and achievement (Lockwood, et al., 2007); and, as previously described, all participants in this study were teachers in a tertiary institution; however, they reported that mentoring relationships were beneficial mainly to skill development and professional competence. Data analysis provided an insight into the nature of the mentor-protégé

relationship and it could be observed that in essence mentors provided support and guidance related to developing teaching skills and class structuring. The following section describes the participant's relationships with their mentors, including the development of teaching skills and class structuring.

Class structure

Samuel reported that the influence of one of his mentors was so effective that currently he still structures contemporary classes based on his mentor's class structuring system, as described below.

> That influenced my class structure. So, my class structure that I teach to this day is basically the same class structure that John had introduced to me…

Another participant, Isabel, described how her mentors taught her to technically structure a ballet class. Furthermore, Isabel's report suggests that her mentors had a philosophical approach supporting the technical structure.

> …Melissa Stansfield and Steve Bacon… …I worked with them… Melissa instructed me on how to structure a class. What goes into it and what comes next. How this happens. …how I structure a class is very much based on their philosophies.

Isabel's mentorship experience, similarly to that of Samuel, formed the basis of how she structures her classes at present (e.g., "how I structure a class is very much based on their philosophies"), and she mentioned details about how her mentors taught her to teach.

> …they would watch and, then, they would give feedback on… …what happened and why this exercise was probably less effective... …all of those things.

Learning about her mentors' teaching "philosophies" might have exerted a significant influence on Isabel's pedagogical learning because her mentors would explore the rationale behind action. That is, why those events occurred: "…what happened and why this exercise was probably less effective..."; however, similarly significant, is the fact that Isabel learned how to teach during real teaching events (e.g., "they would watch and, then, they would give feedback").

In ecological psychology, an important idea is that learning is predicated in the relationship between the individual and the environment (Warren, 2006). According

to Warren (2006) the relationship between the individual and the environment allows the learner to explore information from the physical environment in order to stabilize an intended behaviour. Feedback from Isabel's mentors might have contributed to this behaviour stabilization because it explicated the impact of her actions on the effectiveness of the desired outcome: "…what happened and why this exercise was probably less effective...". As previously explained, Gibson (1986) described this process as *education of attention*, the process representing a shift from non-specifying information to specifying information; and this convergence, from non-specifying information to specifying information, as argued by Jacobs and colleagues (2001) happens after individual's practice with feedback. This explanation suggests that the role of Isabel's mentors in her pedagogical development was to provide critical feedback in order to stabilize an intended behaviour.

To this extent, previous research has shown that mentoring contributes to developing effective teaching behaviours due to the reflective exchange between protégé and mentor (Howes, James, & Ritchie, 2003); In addition Stroot and colleagues (1998) noted that effective mentors have rich knowledge in diverse areas such as content, curriculum and pedagogy. This knowledge plurality of mentors appears to have been expressed in Samuel and Isabel's mentors' multiple mentoring role (Anderson & Shannon, 1988) because they guided them on practical matters concerning teaching. For instance, Isabel reported practical mentoring functions concerning providing information (Hagood, 2008a) (e.g., "Melissa instructed me"); and, Oscar reported practical mentoring functions concerning the provision of a class structure model (e.g., "my class structure that I teach to this day is basically the same class structure that John had introduced to me"). Further to class structure and philosophical approaches to teaching, participants additionally provided information about teaching strategies explored during mentoring interaction. To this extent, Valentino's account is described in order to explicate the critical influence of one of his mentors on his current teaching approach and pedagogical knowledge.

Teaching strategies

Valentino was an individual that faced personal difficulties while learning ballet because he felt that ballet did not fit naturally with him; that is, the execution of ballet movement was extremely difficult for him, as described in the excerpt below.

> …when I was learning… …about ballet, I found it quite hard, I found it difficult, I found it a struggle, I found that it did not sort of fit naturally with me, it did not feel natural.

The excerpt above indicates that, as a learner, Valentino found ballet practice extremely difficult and unnatural. Further analysis of the data indicated that after 21 years of ballet practice, he found a mentor (i.e., Walker Taylor) who, through the utilisation of the Feldenkrais method®, managed to facilitate Valentino's personal understanding of his own ballet practice. The following excerpt reports his movement difficulties, his mentor's teaching approach, and that for the first time in his ballet practice, he experienced pleasure during the execution of ballet movement.

> …working with Walker, who was introducing into his training the knowledge that he had of Moshe Feldenkrais. …that idea of body efficiency and effectiveness. Not having blockages of energy. …to me, that was also a central turning point in my understanding about how I did ballet. I can remember, it was in his class that I first got a pleasure out of doing a 'battement tendu' because I understood in my body what was going on, I was not trying to imitate what somebody else was showing me. I understood about getting this initiation, and the energy flow, and the coordination, and the opposition of the legs. I understood it. I have been doing 'battement tendu', by then, for about 21 years, so it was not as if they were new to me. But, it was, first of all, in his class that I began to get an understanding of how to do it, and that gave me a physical pleasure.

Valentino reported that this particular mentoring experience significantly influenced his own teaching approach when he became a teacher. For this reason, an interpretation of the meaning of this experience for Valentino, alongside discussion of the role played by Valentino's mentor and how this impacted on his pedagogical expertise, is explored.

Three significant features characterised Valentino's experience:

a) The first significant feature was the impact of experiencing his mentor's utilisation of Moshe Feldenkrais' method (Feldenkrais, 1972) for ballet teaching. The Feldenkrais method® focuses on the learner's processes and it aims to facilitate self-discovery through guided exploration while accomplishing a movement goal (Feldenkrais, 1972). This type of pedagogy is focused on developing learners'

awareness of critical sources of information that might provide solutions to their movement problems (Buchanan & Ulrich, 2001; Feldenkrais, 2005). The utilization of the Feldenkrais' method with its pedagogical focus on the learner (Feldenkrais, 1972), contrasts with traditional methods of teaching ballet, where the pedagogical focus is on the teacher's control (Morris, 2003).

Valentino reported that his earlier practice fitted with traditional teaching practices, which were restricted to his imitating another individual (e.g., "what somebody else was showing") and following instructions (e.g., "what someone was telling me what to do"). Morris (2003) and Lakes (2005) argued that these traditional practices in ballet constrained learners' creativity and individuality because they were essentially teacher centred. Their focus was on very prescriptive tasks aiming at aesthetic movement goals and, as a consequence, they disregarded learner's processes in achieving those aesthetic movement goals (Morris, 2003). However, research suggested different approaches to teaching and ballet training. For example, Johnson (2011) emphasised how ballet is important in providing movement foundations for other genres, such as contemporary. Johnson (2011), therefore, proposed an approach to ballet teaching different from the ballet's traditional teacher centred approach (Lakes, 2005; Morris, 2003). This approach proposed that specific areas of ballet technique, such as "self-authorship of movement within the aesthetic of ballet; body alignment and use of excessive muscular tension; use of weight and gravity; use of plie´ as organic connector[s] of movement; and upper body positions and épaulement as dynamic opposition[s]" (Johnson, 2011, p. 184), could be reconsidered as developing creativity, confidence, enjoyment, and facilitating an individual understanding of movement. Johnson's (2011) ideas aimed at facilitating individual movement exploration and empowering individuals to be self-sufficient in relation to their movement through space.

Nevertheless, as described above, enjoying a learner centred approach was not Valentino's experience during his earlier years of ballet practice; it was only when he met his mentor, Walker Taylor, that a shift from a teacher centred approach to a learner centred approach occurred. This pedagogical shift exemplifies the contribution that Walker Taylor made in shaping Valentino's pedagogical development because, by utilising a learner centred approach, he exposed Valentino to a different pedagogical approach from that of the traditional ballet teacher. This

exposure to a learner centred approach was important to Valentino and led to the second significant feature contributing to Valentino's pedagogical learning, as is discussed below.

b) The second significant feature was that Valentino's experience with his mentor, Walker Taylor, represented "a central turning point" in how Valentino understood ballet because, as stated above, his development had been framed within traditional ballet practices as described by Morris (2003) and Lakes (2005). His statement below suggests that those practices did not help him to address his individual constraints; therefore, he experienced learning problems.

> …when I was learning about dancing and about ballet, I found it quite hard. … I found it difficult, I found it a struggle. I found that it did not fit naturally with me.

However, after doing classes with his mentor, Walker Taylor, Valentino was able to grasp a better understanding of ballet. He explained that he understood his ballet practice because his mentor guided him, addressing his individual constraints, helping him to find a functional solution for movement tasks.

> …It was him [Valentino's mentor] leading me, through the understanding of my body. How I could use it in order to work towards getting these particular classical shapes.

As previously mentioned, Valentino's mentor introduced a different teaching approach from the traditional ballet teaching approach. This approach, (i.e., the Feldenkrais method® (Feldenkrais, 1972)) was centred on the learner; therefore, it moved away from the traditional ballet teaching approach, with its focus on the teacher. A learner centred approach is in line with an ecological dynamics, constraints-led approach perspective of skill acquisition and with key ideas from nonlinear pedagogy (Chow, et al., 2015; Chow, et al., 2011). In nonlinear pedagogy, the role of the teacher is to understand how to manipulate task constraints, and to identify vital individual constraints that might facilitate learning and self-discovery (Chow et al., 2007; Davids, Chow, et al., 2005). As a result, individuals learn how to regulate their performance in specific environments and become independent because they are capable of adapting their action continuously, and they can establish connections across different disciplines and content knowledge (Chow, et al., 2015). These ideas suggest that the role of Valentino's mentor was, therefore, to facilitate

Valentino's processes of self-discovery. As reported by Valentino, it was his mentor that guided him through the understanding of his bodily constraints (e.g., "…It was him [Valentino's mentor] leading me, through the understanding of my body"). This guidance appears to have occurred during the interaction of individual and task constraints during Valentino's practice because he reported that he was trying to find his personal movement solutions (e.g., "How I could use it in order to work towards") to achieve specific goals (e.g., "getting these particular classical shapes."). The above statement suggests that Walker Taylor had an understanding of Valentino's skill developmental stage and potential performance outcome; thereby, Walker Taylor could structure a learning experience fit for Valentino's unique developmental stage. Walker Taylor's pedagogical behaviour was aligned with the nonlinear pedagogy perspective that suggests that teachers need to identify learners' stage of development and understand their potential for performance in order to devise learning experiences individually tailored (Chow, et al., 2015; Davids, Chow, et al., 2005).

Another important point in examining Valentino's experience is that although he reported experiencing individual constraints (Newell, 1986) during ballet learning, he acknowledged that it were those individual constraints that facilitated his pedagogical development, as described in the excerpt below.

> I think that, that difficulty that I had, that I experienced, in learning how to get the flow of energy, how to get the coordination, how to get rid of the parasitic blockages in my body. That process of learning, I would contend, and this is my particular thing, has helped me to develop my expertise as a teacher…

From a nonlinear pedagogy perspective, pedagogical processes that encompass the interaction between the learner, the task, and the environment, empower learners in becoming active learners (Chow, et al., 2015; Davids, Chow, et al., 2005); therefore, the above statement suggests that Valentino's mentor, throughout the utilisation of the Feldenkrais method®, guided his processes of self-discovery, which, in turn, encouraged him to become an active learner. Active learners, immersed in learning experiences where constraints are manipulated in order to provide appropriate challenges, engage in processes of self-discovery leading to feelings of enjoyment and motivation during practice (Chow, et al., 2015; Davids,

Chow, et al., 2005). Experiencing feelings of enjoyment and pleasure, which impacted positively on his pedagogical development, was the third significant feature resulting from Valentino's interaction with his mentor.

c) The third significant feature was that Valentino felt pleasure during ballet practice, as it can be read below.

> But, it was, first of all, in his class that I began to get an understanding of how to do it, and that gave me a physical pleasure.

It is here noted that when Valentino had this experience, he had had 21 years of practice since he first started to learn ballet; furthermore, he was already a professional dancer in a dance company. This is why this experience with his mentor had such a big impact on him; it was because pleasure during ballet practice was a feeling that he had not experienced before. Valentino's feelings of pleasure during ballet practice contrast with those views on the acquisition of expertise that assert that individuals do not experience feelings of enjoyment during deliberate practice (Ericsson, 2003; Ericsson, et al., 1993). Therefore, his experience appears to be contrary to Ericsson and colleagues' (2003; 1993) accounts that emphasize that deliberate practice provided by teachers or coaches, and aiming at the development of individual performance, is not intrinsically enjoyable. Valentino's experience, however, put an emphasis on his mentor and his pedagogical actions because his report suggested that it was his mentor that caused his feelings of enjoyment and pleasure during ballet practice (e.g., "…It was him [Valentino's mentor] leading me, through the understanding of my body").

The excerpt above suggests that Valentino's feelings of enjoyment could have had origin from the connection established between him and his mentor, and that his mentor's role was to guide him towards movement self-discovery. Perhaps Valentino's mentor had a first person viewpoint approach using the Feldenkrais method®, because this type of approach promotes an individual's sensitive exploration of movement and self-discovery (Buchanan & Ulrich, 2001; Eddy, 2009). Movement experiences targeting an individual's self-discovery allow for the body to be perceived directly and they promote learning, because there is physical interaction between the individual and the environment (Fortin, et al., 2002). The interaction between the individual and the environment allows the individual to perceive relevant information from his body regulating action during goal directed

behaviours, which in Valentino's account was performing specific classical ballet steps (e.g., "getting these particular classical shapes.").

According to Fortin and colleagues, experiences from a first person view point within the Feldenkrais method® facilitates learning because the individual is forced to experience his own movement in a specific environment; as a result, he becomes aware of his own actions. It is this direct interaction between the individual and the environment during task execution, from a first person view point, that validates an individual's experience (Fortin, et al., 2002). This is probably why Valentino reported having been guided "through the understanding" of his body in relation to his mentor's utilisation of the Feldenkrais method® of teaching classical ballet; it was the understanding of his body that validated his practice. As a consequence, Valentino experienced feelings of pleasure during ballet practice (e.g., "it was, first of all, in his class that I began to get an understanding of how to do it, and that gave me a physical pleasure".)

It needs to be noted that this was Valentino's personal experience; therefore, other individuals might have had different experiences concerning ballet practice and feelings of enjoyment. To this extent, research on ballet and deliberate practice stated that professional dancers of different nationalities experience different levels of enjoyment; for instance, American and Mexican dancers seem to experience greater levels of enjoyment than Russians (Ureña, 2004). Additionally, it has been suggested that the professional feelings of enjoyment seem to be directly related to teachers, because learners cannot learn ballet independently from their teachers, but need to rely on them (Ureña, 2004). This suggests that ballet teachers have total control over the performer concerning specific aspects of practice and training, such as the duration of practice and its objectives; therefore, ballet teachers can significantly influence enjoyment during practice.

Ureña (2004) compared professional and university dance major individuals' enjoyment of ballet class during deliberate practice, and concluded that ballet class was rated as not enjoyable by both groups. It was explained that although individuals may not enjoy ballet classes, they engage in effortful activities because they know these activities are perceived as important for skill mastery. This learner's dependence on ballet teachers, highlights the importance that teachers have in teaching; therefore, it was argued by Ureña (2004, p. 69) that it would be beneficial

"for researchers to define more precisely what characterises a good ballet teacher, and what teaching methods or instructional strategies are most effective". To this extent, Valentino's account within the Feldenkrais method® may provide an alternative to the deliberate practice approach for ballet skill development because this approach, as per Valentino's account, is based on guided exploration and aims at the facilitation of self-discovery, while achieving ballet's movement goal.

In contrast, deliberate practice limits self-discovery because an individual requires an instructor for directing the deliberate practice activities (Ureña, 2004). This proposes that to promote individuals' enjoyment during ballet practice, an approach based on deliberate practice is less effective than a teaching approach favouring guided discovery. Further, in reporting the importance of experiencing enjoyment as a performer, Valentino additionally acknowledged the impact of experiencing enjoyment during practice on his pedagogical development.

> …it is developing the idea of getting the intrinsic motivation. …This would be my experience. It is through the sensation, the physical sensation of being able to enjoy what you are doing. …that is driving my teaching.

The excerpt above suggests that personal enjoyment leads to intrinsic motivation, which is a condition for self-determined intentions to emerge (Deci & Ryan, 2000). Furthermore, it suggests that Valentino has a desire of being intrinsically motivated because if he is not intrinsically motivated, his teaching may not be as effective. Deci and Ryan (2000) argued that when autonomy needs are not met, intrinsic motivation is affected and individuals may embrace inadequate motives and behaviours because individuals cannot behave and act in agreement with their integrated sense of self. This appears to be aligned with Valentino's report from above which suggests that Valentino's teaching action is dependent on his enjoyment of the physical sensation of practice for being intrinsically motivated and this intrinsic motivation is reflected on the autonomous need, which, in turn influences his teaching development (e.g., "It is through the sensation, the physical sensation of being able to enjoy what you are doing. …that is driving my teaching". Valentino, therefore, acknowledged the guiding role that his mentor had during his personal experience and he also reported that that experience compelled him to utilize the same strategy to teach his students.

> It was him [Valentino's mentor - Walker Taylor] leading me… …rather than someone telling me what to do. …this was quite a critical breakthrough for me… …that undoubtedly, I know, has had a big influence on me as a teacher...

The above statement points to the influence of Valentino's mentor in guiding and shaping his pedagogical approach to teaching. Valentino experienced and learnt that a sense of enjoyment promotes practice engagement; and in his opinion, this experience significantly contributed to his pedagogical expertise. He reported that during his teaching practice he also aimed for his students to feel pleasure during their practice.

> …most of the students would have heard me say: 'it would be good if you could get a sense of pleasure.' …I said to them: 'it is possible and it is also desirable because …if it is something that is feeling good for you, it is something that you are more likely to want to investigate. If it is something that hurts, or it is something that does not feel good, then it is something that you might do because somebody tells you that you have to. But, it is not something you are going to do because you want to.

The excerpt above suggests that Valentino aims for students to experience pleasure and to be intrinsically motivated during practice because, according to him, intrinsic motivation leads to further exploration of practice development. Indeed, this link between intrinsic motivation and development during practice has been acknowledged by research within ecological dynamics and the constraints-led approach. For instance, Chow and colleagues (2015) argued that fulfilling individuals' needs and experiencing intrinsic motivation is key for skill development; however, it was additionally argued that fulfilling every individual's needs may be a complex task because each one is unique and has inherent specific capabilities that need to be modified and/or adjusted to match task demands. Valentino's statement appears to be aligned with ideas from nonlinear pedagogy, which convey the role of the teacher acting as a facilitator and engaging the learner in self-discovery processes in order to create better feelings of motivation and enjoyment (Chow, et al., 2015; Davids, Chow, et al., 2005; Renshaw, et al., 2009).

Mentor's Summary

The data revealed that participants' interactions with mentors were initiated by mentors, not by participants. For instance, in Valentino and Samuel's account, experienced dance teachers initiated mentoring relationships and it was from being physically present in their respective dance companies, that both were chosen to be mentees. As stated by Valentino: "he [the mentor] suggested that I should go and study with him further"; and by Samuel: "he [the mentor] selected 3 company members… …and we were mentored". This suggests that sometimes chance, coupled with mentors' perceptions of the high-potential of protégés (Lockwood, et al., 2007), may have an influence on protégé selection. Another finding was that some participants engaged with mentors from other fields. For instance, Isabel's account suggests that interaction with mentors from the field of education can be beneficial in acquiring teaching expertise, although it may not be easy to transfer teaching strategies across education and dance. Another finding was that peers can apparently be mentors and have a significant role in participants' pedagogical development. For instance, Marion's account suggests that peers as mentors can have a significant role in developing pedagogical expertise; however, in these cases it is important to find commonalities and be able to negotiate differences with peers (Dils & Stinson, 2008).

It is important to acknowledge that every participant had informal mentoring relationships, that is, not instigated by a third party (i.e., organisational initiative) (Chao, et al., 1992; Eby, et al., 2007). This is in line with the mentoring literature that states that informal mentoring is more beneficial to career development than formal (Chao, et al., 1992; Ragins & Cotton, 1999). However, it is additionally important to acknowledge that although all participants may have had informal mentoring relationships, their pathways were unique due to each one's personal circumstances and goals. For instance, in Valentino's account, he accepted his mentor's invitation to become a protégé because this was an opportunity to achieve his individual goal, that is, to develop his performance skills (e.g., "my motivation was to learn more intensely my skill as a dancer, as a performer with Walker"). In Samuel's account, his mentor's invitation represented an opportunity for him to develop his interest in choreography (e.g., "I was always very interested in choreography"). As stated by Samuel, even if his primary goal was to learn choreography, not to learn how to

teach, he was still learning how to teach (e.g., "I was gaining knowledge through my experience of them teaching us"). Valentino experienced a similar process, Valentino's primary goal was not teaching; however, by focusing on performance, he learned how to teach (e.g., "My motivation was certainly not to go and learn how to become a teacher. That happened as a by-product").

Samuel and Valentino's accounts suggest that even if the primary goal was not learning how to teach, they learned how to teach by being immersed in specific environments under the influence of their respective mentors (Hagood, 2008a; Mainwaring & Krasnow, 2010). Of relevance is the observation that it was by being engaged in mentoring relationships that Valentino and Samuel started to learn how to teach and obtained knowledge concerning teaching, such as class structuring, approaches, and strategies. Therefore, their mentors' role was to expose them to significant teaching experiences and, by doing so, mentors provided guidance and helped to shape Valentino and Samuel's pedagogical expertise.

5.1.2 Role Models

To a large extent, traditional dance teaching and training is conducted through a master-apprentice relationship, this type of practice being favoured due to the kinaesthetic nature of the knowledge to be conveyed (Erkert, 2003). This relationship between teacher and learner suggests that observing and reproducing a particular teacher as a role model, seems to be a necessary component in becoming an effective dance teacher. The master-apprentice relationship has been described in the literature as a suitable model for learning (Bereiter & Scardamalia, 1993; Erkert, 2003), observation being a major aspect of the learning (Grossman, 1990). This is the case, for example, of ballet, where role modelling has a strong component in teaching (Gray, 1990; Scheff, 2005); nevertheless, a condition that needs to be fulfilled is for the teacher, as a role model, to be competent in transmitting content (Justi & Gilbert, 2002). Role modelling relationships might include mentoring functions (Carruthers, 1990); however, a critical difference between mentoring and role modelling is that in role modelling, role models might not be aware that they are a role model (Lockwood & Kunda, 1997), whereas in a mentoring relationship both mentor and protégé are aware of their status (Eby, et al., 2007).

Participants reported several individuals as having been influential during their pedagogical development. These individuals appear to have fulfilled the criteria for

role models because they satisfied different types of individual needs (Gibson, 2004). Furthermore, participants reported that these individuals played a significant part in their pedagogical development once they had started to dance as students, as well as later during their journey to become teachers. For instance, participants reported that their role models provided inspiration for teaching, behaviours or responses that would indicated how to differentiate between effective and ineffective teaching practices, and different ways for exploring teaching tasks.

This is in line with a role modelling definition which establishes individuals' cognitions as essential in defining role models (Gibson, 2004), and was the rationale supporting participants' reports of their previous teachers as well as of master dance teachers being role models for dance teaching. The term "master" was previously adopted within the dance pedagogical literature in order to qualify teachers' expertise (Cairns, 2010; Kristy, 1996; Warren, 1996). Therefore, in this study, the term "master", in reference to teachers, was also adopted to be consensual with the literature in explaining differences between individual levels of pedagogical performance. Both teachers and master teachers were mentioned as significant individuals acting as role models for teaching; however, as shown below, teachers and master teachers had different roles in shaping participants' pedagogical expertise.

Teachers as role models

Participants mentioned that role modelling by previous teachers was linked to their perception of effective teaching and they reported events throughout their pathway towards expertise at different points in time, including earlier childhood experiences as well as adulthood experiences. Adulthood experiences could be further separated into two different periods: the first period relating to when they were professional performers; and, the second to when they were already prospective teachers or fulltime teachers.

Similarities as well as dissimilarities could be identified between each participant's pathway. In general, what made a teacher a role model was the personal significance of the interactional experiences for each participant. They described meaningful personal experiences in relation to "good" role models to adopt, and "bad" role models, not to adopt. For contextualisation of participants' histories, the terms "good" and "bad" role models were maintained throughout the narrative.

Participants described earlier childhood experiences as well as adulthood experiences, including both "good" and "bad" role model examples. The next section addresses the earlier childhood experiences of role models.

Earlier childhood experiences of role models

Earlier childhood experiences affected participants in diverse ways: for instance, a number of participants mentioned that those experiences created the passion for dance through engagement in fun activities. Other participants mentioned that besides creating the passion for dance, those experiences also fostered their learning concerning ethical and professional values. Learning from those experiences became embedded in who they were and affected what they did at a professional level as well as at a personal level. Participants mentioned that a number of those inter-individual experiences were significant; nevertheless, as previously mentioned, they made a distinction between "good" and "bad" role models.

"Good" role models

Participants had experienced "good" role models since they were children and these experiences helped to frame participants' positive feelings about dance. For example, Alexis mentioned how her childhood dance teacher provided activities linking movement, creativity and expression.

> I remember… …these very early little dances that you did as a child and the joy… …that you had. …I remember the teacher, she was a young teacher and she was very good at… …structuring. …you would do this in the class. You would have a story, and you would act out all of the parts with movement. …I remember that as being really enjoyable, as a child. …it was already connected into dance. So, it was seen as being a part of dance. …that creative element… …was already there. Very, very, early on. It was not just a pure technical kind of a class, so it was quite expressive.

The fact that Alexis remembered this particular example, from all the teaching experiences that she had, suggests that this particular teacher was important to her. Reflecting back to that period, she added that that teaching approach, applying creativity to dance, was appealing because children were encouraged to develop imagination and creativity.

> I remember it was… …very creative in that regard and.. A lot of making little dancers… …encouraging children to use their imagination. That really appealed to me. That was my very early impression.

The experience with this teacher seemed to have been very significant for Alexis because when she moved to another school, she carried that experience with her.

> Then when I moved into a different school… …it was a very, very different approach. But, I still felt that early impression, that early focus stayed with me. I knew, I knew that this sort of… …creativity, we improvised a lot, it was the kind of approach to it [dance teaching].

Alexis' statements suggest that the result of interacting with this teacher allowed her to experience "really enjoyable" feelings during dance practice. Furthermore, her statements also suggest that ideas about creativity and expression, which she employed later as a dance teacher, were created very early, with origin in that particular teacher. It might have been that the way that her teacher structured those "little dances" (i.e., in a playful manner), ignited feelings of joy in Alexis which, in turn, developed her awareness of expressiveness and creativity in relation to dance teaching.

Lindqvist (2001) found that there is a positive relationship between play, dance, and children caused by structuring dance activities in fictional frameworks with particular figures, roles, and actions. This relationship between play and dance seems to have been present in Alexis' earlier childhood experiences: "You would have a story, and you would act out all of the parts with movement". Alexis' statements further support the view that structuring dance in fictional frameworks helps to develop creativity because it provides the opportunity for the individual to create movement according to personal preferences (Joyce, 1994). Joyce's view suggests that Alexis's teacher's approach was in line with her preferences, as elucidated by the following statement: "…encouraging children to use their imagination. That really appealed to me."

Gibson (2004) explained that the attributes of a role model, such as Alexis's dance teacher, can be expressed by role expectations, which concern what individuals believes that they should or should not do as part of an organizational role (Katz & Kahn, 1978). To this extent, role models can express norms,

performance standards, and skills for other individuals (Ibarra, 1999). Role models can also express an idea of what the individual would like to be in relation to the individual's identity (Erikson, 1968). The definition of identity in ecological terms, is understood as a particular form of social representation that mediates the relationship between the individual and the social world (Chryssochoou, 2003).

This suggests that within ecological boundaries, defining individuals' identity is dependent on their interaction with the social world (Chryssochoou, 2003); therefore, the social world can be conceived as an environmental constraint imposed on individuals. The above rationale appears to be aligned with Alexis's reports because it would appear that Alexis's dance teacher established a social liaison with her. Then, by exploring the relationship between creativity and dance during teaching, her teacher expressed a role expectation (Katz & Kahn, 1978) which was aligned with Alexis's individual behavioural preferences concerning creative approaches to teaching (i.e. intrinsic dynamics (Kelso, 1991)). It might have been this reunion of role expectations and Alexis's individual constraints (i.e., future anticipations "I knew that this sort of… …creativity… …was the kind of approach to it [dance teaching]" that defined Alexis's dance teacher as a role model.

Another participant, Samuel, also revealed the important role that his teachers had during his childhood. He mentioned that his first teacher inspired him deeply by infusing in him the joy and passion for dance.

> I had a very inspiring teacher, who was quite vivacious, theatrical, full of energy, loved the stage. …she had an absolute passion for dance… …through her, it was instilled that joy and that passion within me.

The statement above was related to Samuel's first experiences with dance and it related to role expectations (Katz & Kahn, 1978); that is, Samuel's passion for dance was ignited by his teacher's passion for dance. After being with his first teacher for a period of four years, Samuel had a second teacher who taught Samuel from the age of 8 to 9 years old until the age of 15. It was this second teacher that had the deepest impact in Samuel's artistic and professional development because she introduced to Samuel a strong sense of professionalism that has remained with him since the age of eight-nine years old until the present day.

> …the second ballet teacher. So, since I was eight-nine, it has been instilled in me this idea of professionalism, no matter what I do in life, I do it with the

> best of my ability, with complete focus and professionalism. If I cannot do it, I will not start it. … If I know I cannot do it, I will not even start it, but if I am committed, I will completely commit 150%. That is me. That is what I have been like all my life with anything. Anything! Whether it is been personal or professional.

The excerpt above reveals the powerful influence that the second teacher had on Samuel because it can be identified that her influence affected Samuel's sense of professionalism in dance as well as in his personal life. Therefore, it is important to understand what happened at that point in time concerning Samuel's dance training and education. According to Samuel, his second teacher introduced new features from professional performance, such as wearing uniforms, having a time schedule; and she restrained parents from observing children practise. All these features were new to Samuel.

> …what the second teacher did was she instilled an amazing amount of professionalism into her school. It's something that had not been seen in Western Australia before. Obviously, that had come from her professional experience of being a professional ballet dancer in a company. So, all of those things she gained, she introduced into her school. She introduced a uniform, she introduced a time, and she introduced the idea that parents could not watch the class. So, there were a lot of things that she instilled, at an early age for me, through the school.

Furthermore, the second teacher also offered Samuel numerous opportunities to perform.

> One thing that she was very much a believer in was to give her students as much performance experience as possible, even at such a young age. I must have been about eight or nine when I joined her school. So, we would do lots of performance, wherever there were possibilities to do performances. …there would be schools… …that would all come and you would compete against people in your same age group. So, it was through that, that we gained a lot of performance experience. Everything was professional.

The above excerpt suggests that, to Samuel, his second teacher's approach to dance teaching and learning was a new experience because it connected many opportunities for practice shaped by a professional training framework. Furthermore, Samuel's dance education went beyond technical and performance training. The

teacher taught and trained Samuel from an early age (i.e., eight-nine years old) and when Samuel reached 14 years of age, she wanted to meet Samuel's parents in order to enquire about his future career.

> …she took me through all of my grades through the Royal academy of Dance (RAD) and about the age of 14, she had quite a serious meeting with my parents and said that I would have to do some serious thinking in terms of which pathway was I going to choose… …the decision was not a difficult one for me, it was dance.

The above excerpt suggests that Samuel decided to pursue a dance career as a result of the personal interest that his second teacher took in his artistic development. The mentoring literature correlates career and psychosocial functions with mentoring roles (Kram & Isabella, 1985). According to Kram and Isabella (1985), functions that enhance careers include sponsorship, coaching, exposure and visibility, protection, and providing challenging tasks as well as psychosocial functions such as friendship, acceptance and confirmation, counselling and role modelling. These ideas suggest, therefore, that this second teacher was acknowledged as a positive role model because she played the double part of being simultaneously a mentor and a role model. As a role model, she instilled the "idea of professionalism" through coaching and provided challenging tasks; and, as a mentor, she supported Samuel's dance career by providing counselling, acceptance and confirmation of his dancing career. Samuel reported an early, positive experience; however, not all participants' early experiences were as positive as his experience; for instance, Veronica mentioned having had a "bad" role model for a teacher. "Bad" role models and their effect on the development of pedagogical expertise are addressed in the next section.

"Bad" role models

Veronica reported a personal childhood experience in which she classified her teaching role model as a "bad" role model, essentially because of her personal traits.

> I remember I did some classes with [Marianna Steinhopper] …when she taught children, she was viscous and horrible, she drew blood as she poked her nail into their buttocks. It was her personality, she was just driven and she expected everybody else to be like that. She did not get the best out of her students because she was the wrong personality type.

The above excerpt highlights an interactional feature between teachers and dance students concerning caring. Caring between teachers and dance students influences processes of teaching and impacts significantly on learning (Warburton, 2004b). Warburton (2004b, p. 95) argued that a major obstacle to becoming a caring dance teacher was students' conception of dance teachers as being the "ultimate sources of knowledge understanding and guidance", which appears to be reflected in Veronica's observation of her previous teacher as being "just driven" and expecting "everybody else to be like that". Such an experience appears to have advanced Veronica's reflection about teaching because she reflected on the motivation to become a teacher as well as on the qualities that a teacher must have, or develop, such as patience and caring.

> Some people just do not have the patience. They just do not. I mean your basic personality. I think that that is one of the things that really influence becoming a teacher. Do you have the patience? Do you have the love? Do you want to be a teacher? If you do not want to be a teacher, then you are going to be a really crappy one.

The above excerpt suggests that Veronica was able to identify in her previous teacher specific personal characteristics that potentially influenced the quality of her teaching. To this extent, the role modelling literature suggests that "bad" role models portray behaviours and attitudes similar to "good" role models; however, in the former case, the individual is compelled to avoid such behaviours and attitudes because they are perceived as negative (Gibson, 2004). Negative role models point to actions to be avoided by highlighting mistakes, and the consequences of those mistakes (Lockwood, et al., 2002). To this extent, negative role models might have a regulatory effect because individuals might make comparisons between themselves and the negative role model (Lockwood, 2002). It would appear that Veronica established a comparison between herself and her previous teacher by asking herself questions about the role of affect in relation to teaching: "Do you have the patience? Do you have the love? Do you want to be a teacher?" This questioning instigated Veronica's reflection on factors that imply effective teaching, and she concluded that without affect, teaching is ineffective: "If you do not want to be a teacher, then you are going to be a really crappy one".

Emotional climate seems to be a chief construct associated with effective teaching (Walls, Nardi, von Minden, & Hoffman, 2002), and expert teachers seem to give particular consideration to preventive measures to avoid behaviour and management problems (Stough & Emmer, 1998). This is in line with Veronica's statement above about the role of affect in setting the basis for effective teaching. Warburton (2004b) argued that caring can, and should, be learned in order to improve dance education; moreover, he also emphasised the negative role of teacher-learner interaction when the teacher is the authority in shaping learners' pedagogical experiences (Warburton, 2003).

Veronica's statement brought attention to the presence, or otherwise, of affect in teaching behaviour. From a dynamic systems perspective, affect, cognition, and behaviour influence each other and facilitate appraisals of experiences (Lewis, 1996). This perspective considers that an individual is composed of many parts, which self-organise under the influence of constraints while trying to achieve a specific goal (Kelso, 1995). Veronica's statement (e.g., "Some people just do not have the patience. They just do not") suggests that the expression of affect might be inherent to the individual; therefore, might be determined by her intrinsic dynamics. As previously explained, intrinsic dynamics refers to the individual's favoured behavioural predispositions that emerge from the interaction of environmental, individual, and task constraints (Kelso, 1991).

The concept of intrinsic dynamics and the constraints related to the lack of affect that Veronica perceived in her previous teacher's behaviour are useful in explaining Veronica's behavioural regulation. Most probably, in Veronica's account, knowing of that particular teaching experience, constrained a functional affective response different from her previous teacher because, as argued by Jarvilehto (2000), when an experience affords emotional behaviours, the same information can be construed differently by different individuals. Veronica's behaviour was influenced by her knowledge of the teaching experience and the emotional connection that she had previously understood. As a result, she perceived and matched her teacher's lack of affect with non-effective teaching (e.g., "She did not get the best out of her students because she was the wrong personality type"). This suggests that perceiving the "wrong personality" in her previous teacher acted as an informational variable and imposed constraints on Veronica's behavioural dynamics.

Behavioural dynamics incorporates an information-based approach to perception with a dynamical systems approach to action, and behaviour can be explained by attractors that correspond to stable task solutions; repellers that correspond to avoided states; and bifurcations that correspond to behavioural transitions (Warren, 2006, p. 358). Veronica's perception of her previous teacher's behaviour forced her to change her behaviour. These changes correspond to behavioural states to be avoided, and are categorized as repellers (Warren, 2006). Ecological psychology emphasises that an individual needs to understand informational aspects that constrain behaviour because information closes the acknowledged gap between perception and knowledge (Gibson, 1986). According to Gibson (1986), knowledge emerges from experiencing affordances from the environment. The experiential process is grounded on perception and it leads to individuals developing patterns of thought (Araújo, Davids, Cordovil, et al., 2009). Knowing, therefore, belongs both to the physical and psychological spheres (Turvey & Shaw, 1999).

This is exemplified by Veronica's perceiving the lack of affect in her previous teacher's behaviour and judging her as a negative role model. As a result, Veronica re-evaluated the experience and her behaviour self-organised in the opposite direction. Veronica's example illustrates how her intrinsic dynamics related to affect; and the perception of environmental information (i.e., the negative role model of a dance teacher) regulated, and set, her pedagogical behaviour. Besides reporting earlier "good" and "bad" role modelling experiences, participants also reported to have experienced "good" and "bad" role models during adulthood. These experiences, and how they affected participants, are explored in the next section.

Adulthood experiences

"Good" role models

Veronica mentioned having started observing teachers during adulthood, while she was a professional performer. These observations were reported as being significant to her pedagogical learning.

> …observing and experiencing other teachers was pretty important to my [pedagogical] learning.

She described details about class structure, content, and teachers' approaches to learners in relation to expression, subject matter exploration, and respect.

> I think it is incredibly informative… …what they are teaching you, how they structure a class, how they approach the class, as in the humans as well as the teaching of the human's dance. …for me, particularly, I am inclined to people who are clear; yet, open. So, not really rigid, there is still some room for expression and experimentation. People who are respectful of learning, and learners.

From the above statement, it can be asserted that Veronica identified, judged, and retained, examples of what she considered "good" role models in dance teaching; her statement suggests that she admired those individuals because those experiences were judged as "incredible informative"; therefore, she had a personal preference for "People who are respectful of learning, and learners." Her statement also suggests that the rationale behind this admiration included how these teachers taught (e.g., "how they structure a class, how they approach the class") in relation to the transmission of subject matter (e.g., "what they are teaching"). These teachers were clear and simultaneously flexible and explorative in how they approached teaching "people who are clear; yet, open. So, not really rigid, there is still some room for expression and experimentation."

Veronica's statements are in line with the role modelling literature that stated that a feature that distinguishes role models is the prevalence of specific attributes (e.g., role-expectation information, performance standards, and skill expertise) (Gibson, 2004). Gibson's (2004) list of role model attributes suggests that Veronica might have perceived these role models as positive because they provided information concerning role-expectation information (e.g., "how they structure a class; how they approach the class"). Furthermore, she admired these teachers for respecting the "learning and the learners". These perceptions concerning role-expectation information and respect for learners suggest similarities concerning pedagogical goals between Veronica and those teachers, and has been reported within the role model literature by Lockwood and Kunda (1997) who suggested that individuals chose role models if they pursued the attainment of similar goals. Overall, role-expectation (Gibson, 2004) and goal similarity (Lockwood & Kunda, 1997) seem to have predisposed Veronica for choosing a particular type of teacher as her role models, teachers who were simultaneously rigorous and flexible (role-expectation), and were respectful of learners (goal similarity). It would appear that these were the types of teachers who became her role models.

Another participant, Oscar, similar to Veronica, also mentioned having experienced "good" role models while being a professional performer. He revealed having had a particular strategy to learn from these "good" role models: whenever Oscar had a good and enjoyable teaching/learning event (e.g., a dance class) with a good teacher, he would take notes, and would reflect on the features that characterised that event as positive.

> If I had a good teacher, I would think about after the class: 'Why was that good? Why did I enjoy it?' I would also take notes… …and think what was working well for them. 'How do I apply?' 'Would I apply that in the future for myself?' So, now, I can go back and think: 'They were doing that really well. They were communicating really well. They were engaging with the class in a really interesting way.' So, then, how do I apply that to myself, as well? So, it is just using that experience.

From the above excerpt, it can be interpreted that Oscar approached the above experience from a learner as well as from a teacher perspective. From a learner perspective, he reflected on his enjoyment: "Why did I enjoy it", and on what the teacher was doing in order to produce effective learning: "…what was working well". From a teacher perspective, he identified two critical components of effective teaching: communication (Frymier & Houser, 2000; Muijs & Reynolds, 2011) (e.g., "They were communicating really well"), and learners' engagement (Muijs & Reynolds, 2011; Walls, et al., 2002) (e.g., "They were engaging with the class in a really interesting way"). Subsequently, he reflected on how he could model the same procedures in his teaching. Oscar reported a reflective process in relation to investigating the application of the same procedures; however, only relating to himself: "Would I apply that in the future for myself?"

Oscar's reflection suggests that he might be aware of his intrinsic dynamics (Kelso, 1991) in relation to probable task constraints encountered during teaching. Each individual has unique intrinsic dynamics shaped by environmental, personal and task constraints (Davids, et al., 2008) and, from a dynamical systems perspective, learning occurs by linking the individual's intrinsic dynamics to specific task constraints (Corbetta & Vereijken, 1999). This implies that Oscar's reflection, most possibly, aimed to understand if those procedures from his role models would match his intrinsic dynamics. In case of a positive match, he would be able to address

his personal and task constraints and he would become an effective teacher. It would appear that, for Oscar, awareness of his own intrinsic dynamics played a significant part in acquiring pedagogical expertise because that awareness allowed an understanding of which pedagogical strategies would suit him better. Due to his personal knowledge of his intrinsic dynamics he, therefore, harnessed pedagogical strategies specifically suited to him. Phillips and colleagues (2010) conducted research in sport expertise and argued that knowing an individual's intrinsic dynamics allows for the specification of changes in performance as a result of environmental, intentional or learned influences. Due to the knowledge of one's intrinsic dynamics, an individual becomes capable of devising a range of functional performance solutions (Phillips, et al., 2010). This gives further support to the claim that knowledge of one's intrinsic dynamics is important to achieve expertise.

Another point to be taken from Oscar's event is that he started to identify "good" role models while he was a professional performer and, in parallel, a beginner teacher. He completed his teaching degree while working as a professional performer in a dance company.

> …when I was still performing… …I was interested in teaching already. To take notes, all through my career, about what was good and what was not good. Now, I try to use that to apply to myself in teaching.

In fact, observing teachers and reflecting on teaching, while being simultaneously a professional performer as well as a beginner teacher, appears to have been beneficial to Oscar because it allowed for an understanding about teaching from both a teacher and a learner perspective, as suggested by the following excerpt.

> Yes, not to forget how it is when you were dancing, what works and what does not work.

Learning from teachers while being a professional performer and a beginner teacher was helpful to Oscar in becoming an effective teacher because he could understand how the pedagogical content (that Oscar had acquired during his completion of a teaching degree) could be applied in real-world practice (his professional dance company). The link between practice and real-world conditions correlates with ideas of representative design, which state that the individual needs representative tasks with comprehensive information from the real world in order to be able to exhibit functional behaviours (Brunswik, 1956).

Davids (2012) argued that representative task design is predicated on the correspondence between constraints and the behavioural context, that is, constraints should be representative of the context where performance should occur. This idea is important with reference to learning (Chow, et al., 2011; Pinder, Davids, Renshaw, & Araújo, 2011) because it articulates the role of information as an adaptive process on individual's behaviour (Brunswik, 1956). In this case, however, Oscar's pedagogical learning appears not to have been guided by any of his teachers (either at university or in the dance company) because he did not report any relevant learning experiences faithful to the real-world, where he was supposed to teach. In fact, it appears that Oscar might have established the link between teaching in an educational setting (the university) and teaching in the real-world (his professional dance company) by himself. He empirically explored specific teaching practices.

Oscar's behaviour is in line with previous research on ecological dynamics and the constraints-led approach and learning, which acknowledged the significance of establishing representative learning design between performance and contexts where performance occurs (Davids, 2012). Individuals, as complex systems, develop a complementary relationship between their perception and action systems; this system's complementary allows for individuals to coordinate action in specific environments. According to Davids (2012), including representative learning design during practice, is key to coordinating action and developing performance expertise in specific environments because only then can practice offer faithful simulation of relevant informational properties and constraints that performers will meet in the real world. This implies that the constraints that individuals face during practice need to effectively replicate the performance environment in such a way that they would allow individuals to detect key affordances useful for action.

Furthermore, the inclusion of representative learning design allows for individuals to couple actions with key information sources in a specific environment and to adopt functional practices (Davids, 2012). This suggests that, for Oscar, in the absence of a teaching practice environment inclusive of representative learning design, experiencing teaching at the university and at the professional dance company appears to have been beneficial in facilitating his understanding of the functional pedagogical adaptations required in each specific environment. It would appear that he was capable of perceiving key affordances for action in each

environment; furthermore, he was able to couple pedagogical action with key information in each specific environment. This is probably why he chose particular teachers for role models; he chose teachers who, according to his standards, exhibited functional behaviours and provided positive performance standards and skill expertise (Gibson, 2004). Teachers who met the abovementioned criteria were the ones who became role models for Oscar. Oscar further reported that a dual experience of combining performance and learning how to teach in the real-world, to him, was more comprehensible than just learning how to teach without the performance component.

> The stuff that I was learning in the classroom, before work, I could apply it to myself because I was still dancing.

Indeed, experiencing teaching and learning events with several teachers while being a professional performer appeared to have had a significant impact on Oscar's journey towards achieving pedagogical expertise. However, besides his references to experiences with "good" role models, he also reported to have learned from "bad" role models. These experiences, associated with "bad" role models, are related below.

"Bad" role models

Oscar reported that experiences with ineffective teachers also contributed to the acquisition of pedagogical expertise because they prompted him to move away from negative behaviours (Lockwood, et al., 2002).

> I have had that bad experience of having bad teachers, and bad role models. So, that was an important thing for me as well. It was identifying what other teachers are doing bad and trying not to fall into those same mistakes.

Oscar mentioned specific details about what was going on during these events that caused a negative impression on him; hence, he classified these teachers as "bad" role models.

> I had a lot of teachers that do not really have a rapport with the students. So, they are not effective teachers, it is not a good way to learn. I have had teachers that have been really bad communicators, badly organized, that has been really frustrating to me as a dancer. So, I have used my 'bad' experience as a dancer to try and correct myself.

Experiencing these events seems to have caused a profound negative impact on Oscar; henceforth, Oscar evolved in the opposite direction of these "bad" role models. He prepared his classes thoroughly, learned how to engage students, and how to communicate effectively.

> I always have my music prepared... I always have my classes prepared. I learnt how to engage the students, how to build their confidence. You do not just shout at them, you do not make them feel bad, you try to encourage them. So, I think how to communicate… …was a big focus.

The above statement suggests that these events deeply influenced Oscar's approach to teaching because he perceived these teachers' behaviours and, upon reflection, he formed counter-norms (Merton, 1968). Merton (1968) argued that social interaction with negative role models might induce self-appraisal and generate the production of counter-norms, which are norms that are contrary to what is perceived as negative. This is in line with Oscar's statements because his statement suggests that he moved away from negative role models' behaviour (e.g., "You do not just shout at them. You do not make them feel bad") by forming his counter-norms (e.g., "I always have my music prepared... I always have my classes prepared. I learnt how to engage the students, how to build their confidence").

As discussed earlier, being a professional performer, concomitant to being a beginner teacher, appeared to have been important for Oscar's acquisition of pedagogical expertise because he self-experienced negative as well as positive teaching events. Therefore, he became aware that a teacher does "not make them [the students] feel bad" and he moved in the opposite direction forming counter-norms (Merton, 1968) positive to students' learning. This behaviour was expressed in his statements; for instance, he reported that, as a teacher, he tries "to encourage them [the students]". Veronica, another participant, also mentioned having experienced negative teaching events which prompted her to move away from those specific behaviours.

> …there are certain mannerisms that… …I would find negative… Then you would be looking to not replicate that...

Those events appeared to be significant to Veronica since those teachers demonstrated behaviours that would impact negatively on learning experiences;

therefore, she identified those teachers and tried not to replicate those types of behaviours.

> …now if I had a bad moment, where I say something. I think: 'ohhhh…'. Those kind of past historical experiences flash up. As you, sort of, slap yourself and say: 'that was Mrs. such and such'.

Veronica's account is another example of the influence that "bad" role models have had on participants' pedagogical development. To this extent, participants developed counter-norms (Merton, 1968), which facilitated the emergence of pedagogic effective behaviours.

Master teachers as role models

This section describes and interprets how master dance teachers contributed to the development of participants' pedagogical expertise. The term "master" has been utilised in previous studies on expertise, such as in chess (Chase & Simon, 1973) and dance pedagogy (Lakes, 2005), with reference to the highest degree of expertise attained by individuals. In general, individuals who are identified as "masters" are considered hierarchically above individuals who are identified as "expert". In this thesis, the term "master" was similarly adopted in order to establish a hierarchy between expert dance teachers and master dance teachers.

Due to the nature of the information exposed, the association between participants and master teachers could allow participants' identification; therefore, strategies to keep anonymity were applied to master teachers throughout this section. However, as generic, non-study related, and for appropriate hierarchical contextualization, a number of individuals that illustrate who could be identified as master dance teachers are provided as examples. These individuals are presented randomly and only as references: Leigh Warren, Martha Graham, Merce Cunningham, and Steve Paxton.

Experiences with master teachers were significant to participants because these individuals were perceived as being passionate about teaching. Passion, therefore, was a property reported by participants as having an inspiring effect upon their pedagogical developmental trajectory. For example, Elvira reported to having interacted with very passionate contemporary master teachers.

> I have experienced some incredible teachers… …some of the really important teachers in contemporary dance. The way that they are passionate about what they do inspires me.

Mirochnik and Sherman (2002) reported how a range of art teachers nourished a passion for teaching in order to sustain pedagogical development. Furthermore, passion appears to be essential for good teaching because it has an effect on teachers' effectiveness and creativity (Day, 2004). Creativity, expressed in passionate teachers' pedagogical practices, enables the acquisition of a wide assortment of pedagogical skill, leading to innovative teaching behaviour (Mirochnik & Sherman, 2002). These links between passion and pedagogical skill development leading to innovation, are in line with Elvira's report. She reported having judged these master teachers as exceptional because they brought innovation into the contemporary field.

> I met… …people like Bryan Porter and Charlotte Dixon who were very key innovators in contemporary dance... …they just seemed completely immersed in what they were doing, they embodied what they were talking about, fully. So, there was no separation, there was a sense that they fully live, and that was quite inspirational. The ideas they had about life and about dance, as part of that.

The excerpt above points to another reason for Elvira considering these master teachers as inspirational role models: they were perceived as embodying life and dance in their pedagogical behaviour. The potential to achieve an embodied behaviour involving life and a teaching profession, appears to be aligned with Elvira's pedagogic goal-oriented behaviour; this is probably why she judged Bryan Porter and Charlotte Dixon as "quite inspirational".

Previous research from role modelling and ecological perspective is useful to understand Elvira's perception of these master teachers' behaviour as role models. Role modelling research (Lockwood, et al., 2002) has argued that individuals are inclined to be inspired by role models who embody a desired personal nature because this desired personal nature acts has a regulatory function motivating the individual to achieve a particular self. The self, from an ecological perspective, can be conceived as a goal that the individual tries to achieve during the course of goal-oriented action (Markus & Wurf, 1987). While pursuing a particular goal, the individual might become attuned to critical sources of information, such as social

affordances (Gibson, 1986), possibly leading to positive outcomes (Lockwood, et al., 2002). These suggest that in Elvira's example, Bryan Porter and Charlotte Dixon, as role models, might have represented a way to achieve positive outcomes, in the same way that an individual becomes attuned to critical affordances which might provide support for achieving performance goals (Davids, et al., 2015). This might be the rationale behind the inspirational effect that Bryan Porter and Charlotte Dixon, as role models, had on Elvira. They facilitated a positive behavioural regulatory function (Lockwood, et al., 2002) because "They embodied what they were talking about, fully". Perception of that particular embodiment appears to have been important during Elvira's pedagogical development; therefore, they became inspirational role models (Araújo, Cruz, & Almeida, 2011) supporting Elvira's journey to pedagogical expertise.

Another participant, Hilda, provided details about how the process of learning from master teachers was. She described having had short, intense, and remarkable events with these teachers and, at that point in time, Hilda was a beginner teacher and concurrently a professional performer. Her descriptions included how these teaching and learning events developed.

> …being exposed to really extraordinary teachers of contemporary dance… I went and studied intensively in Atlanta with Grace Morales… …in fact I did class with Grace Morales herself, several times. … I did class with Theodore Armstrong, as well. Those were short periods, like three months, then, we would come back to the company and, then, went away for another two months. They were very intense, we would do four to five classes a day, and I would just try to soak up everything…

Analysis of Hilda's statements exposes that these teaching and learning events were "intense" due to the high number of classes per day. Most probably, these classes posed learning difficulties for Hilda due to the number of classes that she attended daily, added to the amount of content that these classes contained that she need to learn. Furthermore, it needs to be clarified that those were dance performing classes, not classes aimed at how to teach. Therefore, as a dance student, she needed to learn the class content; plus, as a beginner dance teacher, she tried to learn how those teachers were teaching the content. The excerpt below describes these events and reveals Hilda's learning strategy.

> …it was in short, sharp, I guess, intense moments, I would go home every night, and I would be exhausted. I would write down things that I could remember that teachers said, what Grace Morales said, images that she had given, things she said to me, personally. Exercises that I thought, really, made my body feel… …that it was being developed. I had this huge notebook… …and I would write about everything, and every class…

Hilda tried to "write down things" about everything that she believed was critical for her learning from those remarkable teachers. Those "things" that Hilda wrote about, from an ecological psychology perspective, constitute her affordances for learning and were influenced by Hilda's intentions: "Exercises that I thought, really, made my body feel… …that it was being developed." Learning affordances are co-dependent with individuals' intentionality because intentionality determines their focus of attention (Young, Barab, & Garrett, 2000). The individuals' intention directs their focus of attention to specific affordances that relate to the task and avoid irrelevant information (Young, et al., 2000). Gibson (1966) argued that this process exemplifies the ability of a learner being able to educate his attention (i.e., perceptual attunement) to functional variables. Hilda wrote about "things" that she "could remember" and about features that her teacher said specifically to her "personally", this suggests that Hilda's perceptual attunement (Gibson, 1966) and intentionality guided her behavioural organization towards attractors states. Those teachers were perceived by Hilda as being "really extraordinary teachers of contemporary dance"; hence, they were identified as important sources of knowledge. She mentioned one particular teacher as owning a significant body of knowledge.

> …there, with Darlene Garza… …always used to go there to do a floor bar because she had such incredible knowledge of the body.

The above statement exemplifies two features in relation to expertise development: first, it supports the view that expert teachers have extensive knowledge of subject matter (Bond, Smith, Baker, & Hattie, 2000); and, second, it further supports the view that Hilda was able to educate her attention to specifying information variables (Gibson, 1986), while trying to achieve the goal of becoming an effective dance teacher. Hilda's pathway to expertise was in contemporary, which, due to its complex technical nature (Albright, 1997) is difficult to teach (Fortin, et al., 2002); therefore, the interaction with Darlene Garza might have enabled the

acquisition of knowledge of the body that Hilda required. The specific conditions of how these events happened contributed to Hilda's learning in relation to acquiring subject matter as well as in developing teaching strategies. Furthermore, most significant to the field of dance teaching, she was additionally exposed to artistry development, as per the interpretation of the quotation below.

> …what they taught you or how they imparted, how they developed you as an artist, it was kind of different to what you learned technically. …it was very integrated for me… …I never thought: 'you are doing technique, and now you are going to rehearsal'. I knew there was a division, but, for me, it was like one continuous development that happened.

Of note, is the fact that those teachers were not teaching Hilda specifically about how to develop artistry or about what subject matter or teaching strategies to exploit in teaching; their objective, from interpreting Hilda's data, appears to have focused on developing Hilda's performance skills. Therefore, analysis of Hilda's data suggests that she learned about coupling technique to artistry by herself. This can be interpreted from her report below.

> So, I guess, that was something I had to put together because no one said: 'this is how you build a good class…

The excerpt above suggests that cognition was required for Hilda's understanding of pedagogical processes linking artistry with technique. Most probably, Hilda learnt by experiencing and reflecting on those teaching events. The ecological perspective on skill acquisition, establishes cognitive processes as resultant from mechanisms of perception and action, as well as from the acquisition of knowledge of and about the environment (Araújo & Davids, 2011). Based on this framework, it is important to understand the acquisition of knowledge in relation to expertise development. As discussed earlier, Gibson (1966) distinguished two types of knowledge: *knowledge of and knowledge about the environment*. *Knowledge about* the environment is typified, for example, by a prescribed set of verbal instructions provided by a dance teacher concerning a movement. This type of knowledge involves indirect perception instantiated by language (e.g., instruction, feedback) or visualizations (e.g., pictures, symbols) associated with a specific meaning (Gibson, 1966). *Knowledge of* the environment is typified, for example, by a teacher adapting verbal instruction, while perceiving learners' behaviour, in order

to achieve a specific goal. This type of knowledge involves perception of invariants, beneficial to control of action, in relation to an individual's action capabilities (Gibson, 1966). Perception of invariants, as argued by Gibson (1966), directly constrains functional behaviours and facilitates action regulation. Hilda's statements suggest that she was capable of acquiring *knowledge about* as well as *knowledge of,* by being immersed in a specific environment, where she acquired knowledge through mechanisms of perception and action. Hilda was at the same time a professional performer (taking classes from teachers) and a beginner teacher (teaching other individuals). Analyses of data have suggested that it was the combination of both these roles that facilitated her pedagogical learning.

> …we [Hilda and other professional dancers] would do our own class, we were taught our own class… …then at night, we taught. So, that was how I learned on the job.

The above excerpt gives emphasis to the learning process parallel to being a learner and a teacher. Hilda's *knowledge about* the environment is exemplified by being taught a given set of verbal instructions delivered by dance teachers concerning movement. *Knowledge about* the environment involved indirect perception and was expressed by her teachers language (e.g., "things that I could remember that teachers said, what Grace Morales said), and visualizations (e.g., images that she had given) and was associated by Hilda with a specific meaning (e.g., "how you build a good class"). *Knowledge of* the environment is exemplified by Hilda's adaptations to her teachers' verbal instruction because perceiving her behaviour in order to achieve a specific goal, implicates perceiving invariants, beneficial to regulation of action, in relation to her action capabilities (e.g., "Exercises that I thought, really, made my body feel… …that it was being developed"). The direct exploration of both roles suggests that being a dance performer parallel to being a teacher facilitated Hilda's attunement to perceptual invariants influencing teaching. Jacobs and Michaels (2007) argued that task experience facilitates better elaboration of information linked to effective action throughout processes of direct learning. Through direct learning, expert performance emerges from the increasing functional fit between individuals and the environment; specifically, individuals become increasingly attuned to environmental affordances, which they use to regulate behaviour (Jacobs & Michaels, 2007). This further

supports Hilda's assumption that learning "on the job" was significant for her pedagogical development.

Another point made relevant by Hilda was the master teacher's ability to couple technique with artistry. She revealed having experienced this coupling between technique and artistry, only in the presence of the best and most famous teachers.

> …So, artistry and technique… …I have learned from the best ballet teachers… …or with the ones who are famous teachers, that they made every class dancie. …it is very fluid… You can do your bar work, but you can do it in a way that feels like you are dancing, even in a simple exercise. I think that is, probably, an attribute of a really good teacher, that they [dance learners] feel that they are dancing in class. They [dance learners] are not just doing their exercises.

From the above excerpt, it can be understood that coupling technique with artistry seems to be an ability of master teachers. It was additionally reported by Hilda that the ability to couple technique with artistry provides quality of movement and makes classes enjoyable.

> Quality of movement… …and making it enjoyable, I guess that is the other thing. Making it enjoyable, not for the sake of it, but because there is something in the way you have structured the class. It seems natural; it seems the right way to do it.

In order to make it enjoyable and "dancie", according to Hilda, it was necessary to follow a specific class structure. The following quotation illustrates how she acquired *knowledge about* (Gibson, 1966) class structure through extensive practice with master teachers.

> I knew what the structure was, and how you build it up over time, because I had been to beginners classes, intermediate class, advanced… …You have got that structure… …how to structure a class, this is how it is done, this is how the greats did it, and this is how they taught the next generation.

Hilda's reports suggest that quality of movement, evolving from the coupling between "artistry and technique", added to the capacity to structure dance classes, led to enjoyment; furthermore, she stated that enjoyment seems to be a property present within best teachers. This suggests that the ability to create a sense of enjoyment is

an important property of expert dance teachers. It was not clear in the data how Hilda's master dance teachers developed a sense of enjoyment. However, a possible explanation points to master teachers using imagery as a teaching strategy because Hilda reported having learned and accumulated a wide repertory of imagery teaching strategies from a specific teacher.

> I would write down things that I could remember that teachers said, what Grace Morales said, images that she had given, things she said to me, personally. … The other thing that I think you build up is a stock of imagery because people learn from imagery, and metaphor, and illusion.

In relation to the use of imagery in teaching dance to professional dancers, Nordin and Cumming (2006) suggested that instruction using imagery develops better quality of movement and enjoyment. The link between imagery and higher levels of enjoyment in dance has also been confirmed by Sacha and Russ (2006) in a study where imagery was used to provide dance instruction to preschool children. They compared instruction based on demonstration and the technical name of skills, with instruction based on imagery and concluded that the first exhibited lower levels of enjoyment than the second (Sacha & Russ, 2006). Additionally, Mainwaring and Krasnow (2010, p. 14) in a study presenting practical teaching strategies to enhance the mastery of skills, self-esteem, self-efficacy, and positive self-image, argued that imagery can enhance expertise development by enhancing learners' body awareness. Additionally, Sacha and Russ (2006) as well as Mainwaring and Krasnow's (2010) studies are in line with Daubenmier's (2005) study of the relationships between movement activities and body awareness, which concluded that body awareness seems to predispose enjoyment and to be beneficial to expertise development in movement performance activities. The studies above (Mainwaring & Krasnow, 2010; Nordin & Cumming, 2005), identified that imagery is important in developing a sense of enjoyment. This is in line with Hilda's report and with the importance she placed on exploring imagery as a pedagogical strategy while being a beginner teacher.

The second factor contributing to enjoyment reported by Hilda was class structure. To this extent, previous research on dance pedagogy emphasised that class structure should be clearly defined based on dance teachers' expertise and on their approach to the dance class (Mainwaring & Krasnow, 2010). However, within some

approaches to expertise development, such as the deliberate practice approach to sport expertise, there have been suggestions that structured activities requiring physical and cognitive effort are not usually intrinsically enjoyable (Ericsson, 2008). From this perspective, teachers or coaches are responsible for the design of intensive, repetitive, goal-directed deliberate practice activities aimed at the development of particular aspects of individual performance (Ericsson, 2002). It was argued by Ericsson and colleagues (Ericsson, et al., 1993) that because deliberate practice is characterised by being intensive, structured, and not inherently enjoyable, parental support and early access to instruction is necessary to help performers cope with training and performance demands.

Contrasting with the deliberate practice approach, the ecological dynamics, constraints-led approach suggests that unstructured practice, presented as unsystematic movement variability aiming at specific movement goals (Schöllhorn, 2000), is beneficial to learning and generates enjoyment (Renshaw, et al., 2009). Renshaw and colleagues (2010) argued that unstructured learning environments allow for the individual exploration of many possible movement solutions which, in turn, are conducive to better movement adaptability. From a nonlinear pedagogy perspective, the importance of implementing practice in unstructured environments to promote informal learning opportunities is supported by the work of Schöllhorn and colleagues (2012) in sport, who demonstrated that there is sufficient evidence of the differential approach's greater benefits for learning particular movement techniques, in contrast with other approaches that are based on repetition and correction. For instance, in football, three groups, one traditionally trained with repetition and correction oriented approaches; and the other two trained with the differential approach, with blocked and random sequences of training on shooting at a goal and ball control tasks, occurring twice a week, for a period of four weeks (Schöllhorn, et al., 2012). The findings showed noteworthy benefits for both differential groups in the learning and acquisition phases in comparison with the traditional group. This suggests that the differential approach is superior to the traditional approach for learning movement technique because the former perturbs individuals towards learning more functional patterns during unstructured practice; whereas the latter is more limited for learning because it follows a direct linear path, by means of implementing repetition and correction (Schöllhorn, et al., 2012). This

utilization of unstructured learning environments is distinct from Hilda's engagement in highly structured activity; therefore, it might provide an alternative model to that of the pedagogic development of movement performance educators (Renshaw, et al., 2010).

The analyses and interpretations of Alexis, Elvira, and Hilda's accounts suggest that the roles of master dance teachers were inspirational for them, by providing exemplar behaviours that could be emulated. Furthermore, they were also instrumental in providing pedagogical knowledge, such as *knowledge of and knowledge about* (Gibson, 1966); and teaching strategies, such as the utilization of demonstration and imagery. This highlights that the role of master dance teachers supporting participants' development of pedagogical expertise included several functions, such as being inspirational, being a source of subject matter knowledge, and being a provider of practical teaching strategies.

Role Model' summary

Role models are an environmental social constraint reported by participants as having influenced their pedagogical development. Participants reported having had several teachers as role models throughout life, contributing to the improvement of their teaching effectiveness. These role models were associated with different functions such as: (1) providing inspiration for teaching; (2) providing psychosocial support; (3) providing knowledge of subject matter; and (4) facilitating the exploration of practical teaching strategies. Teachers, as role models, had different roles concerning pedagogical acquisition and they could be divided into childhood, adulthood, and master teachers; however, participants described all as being equally important to pedagogical development. Earlier childhood experiences were associated with developing passion, creativity, ethics, and professional values through fun activities; adulthood experiences facilitated *knowledge of and about* (Gibson, 1966) class structuring, exploration of teaching approaches and subject matter; and master teachers' experiences had an inspirational role (Araújo, et al., 2011) throughout their passionate behaviour and capacity to implement enjoyable dance classes.

Master teachers' pedagogical behaviour was perceived as not being related solely to the teaching profession, but was perceived as being part of who these master teachers were. Furthermore, they were also perceived as key innovators and

key sources of knowledge. The presence of different types of teachers in different phases of participants' journeys to pedagogical expertise is similar to findings from the field of talent development in sport, which has acknowledged different teachers linked with various phases of learning during expertise development (Durand-Bush & Salmela, 2001).

Participants' reports were organised in terms of "good" and "bad" role models. Both "good" and "bad" role models instigated learning and contributed to the acquisition of pedagogical expertise. "Good" examples were adopted and emulated; "bad" examples were kept in mind so as to avoid replication. The extensiveness of "good" and "bad" role models in participants' pedagogical development is in line with the idea that within the constraints-led approach, constraints might not always be negative (Renshaw, et al., 2009) because, as emphasised by the role modelling literature, even "bad" role models can be helpful to regulate behaviour (Lockwood, et al., 2002).

5.1.3 Students

Students are another environmental constraint that was reported by participants as being influential in acquiring pedagogical expertise. Participants declared having taught different types of students since the beginning of their teaching career and analysis of data allowed for these types of students to be divided into groups according to age and specific environments. Age discriminated children and adults; and, environments discriminated individuals from universities, dance academies, professional dance companies, and communities. Data analysis suggested that the relationship between students' diversity and the exploration of teaching tasks could have been beneficial to participants' acquisition of pedagogical expertise because many participants reported that having had the experience of teaching different types of students from different environments allowed for a diversified exploration of teaching tasks. Students' diversity and environmental specificity are explored in the next section.

Students' diversity

Roxanne, for instance, reported that she had taught a combination of four different types of student groups all having different ages, levels of experience,

genres, and of different environments. She reported that having had that variability was critical to her development as a teacher.

> …having a variety of classes, with different levels, and different age groups, and different locations [of students]. You continually evolve as a teacher, I believe. …I will continue to evolve as a teacher…

Roxanne's excerpt above suggests that students' variability influenced her pedagogical development because she identified specific variables (e.g., "having a variety of classes, with different levels, and different age groups, and different locations") allegedly supporting her pedagogical development (e.g., "You continually evolve as a teacher"). Furthermore, Roxanne emphasised the continuous nature of her pedagogical development process ("…continually evolve as a teacher"). This suggests that Roxanne's pedagogical development was potentially supported by her continuous pedagogical interaction with diverse groups of students.

Oscar, another participant, also reported that his pedagogical development was influenced by a diverse range of students in specific contexts. Nevertheless, he mentioned having made a conscious decision in choosing to teach children, adults, and professional dancers. This contrasts with Roxanne's accidental interaction with students; in her case, engaging with a range of students happened due to chance. Oscar decided to consciously teach a diverse range of students because he realized that by teaching children, adults, and professionals he would become a more efficient teacher, than if teaching, for instance, only adults. Each of these groups, according to Oscar, had different learning needs; consequently, he was required to develop specific strategies to address each group's learning needs.

> …I thought that, that [teaching children, adults, and professionals] would give me more experience: if I know how to deal with children; if I know how to deal with adults; if I know how to deal with professional dancers; because you have to change your approach to each group. So, I cannot teach, in the same way, children as I teach professional dancers. That teaches you to change your little techniques to target the audience in the best way.

The above excerpt suggests that student variability naturally forced Oscar to change his pedagogical approach to fit each group's learning needs. This suggests that students' variability acted as an environmental constraint and influenced Oscar's pedagogical effectiveness. From a constraints-led perspective, the diversity plus the

contextual specificity of students acted as an environmental constraint, altering Oscar's pedagogical development. Variability exploration is a key feature in facilitating learning (Davids, 2012) because functional patterns of coordination emerge from the interaction of environmental, task, and individual constraints (Newell, 1986). Environmental constraints (i.e., students' variability) set boundaries on Oscar's pedagogical performance, emphasizing that effective teaching is context dependent (Bullough & Baughman, 1995). This means that in order to be effective, Oscar needed to have acquired *knowledge of and about* (Gibson, 1966) his students because it is the combination of both these types of knowledge that enables effective individual action (Araújo, Davids, Cordovil, et al., 2009). Exploring variability is functional to action because it helps an individual to adapt to the unique environmental, task, and individual constraints imposed on them over time (Davids, Glazier, Araújo, & Bartlett, 2003). In other words, by being exposed to variability, individuals are flexible in responding to changes in dynamic environments; therefore, they are able to maintain stable performance.

Expertise, from an ecological dynamics perspective, exemplifies an individual's capability to be both stable and flexible during performance (Seifert, et al., 2013). This further supports the functional role of variability in determining which coordinative structures emerge under the influence of constraints. Throughout exploration, a different range of behavioural organizational states are tested and the ineffective states are discarded (Davids, Bennett, et al., 2003; Turvey, 1990). Most probably, by exploring the variability inherent in each group of learners, Oscar perceived and understood that each group had specific characteristics, which is why he revealed that each group needed to be pedagogically tailored (e.g., "I cannot teach, in the same way, children as I teach professional dancers"). By being exposed to "children", "adults", and "professional dancers", he was able to test a different range of behavioural organizational states and discard the ineffective states in reference to each particular group. Oscar learned how to adapt his pedagogical approach to fit each group's learning needs (e.g., that teaches you to change your little techniques to target the audience in the best way").

Oscar reported that the particular group he preferred is children. Eaude (2015) stated that teaching children requires a large range of pedagogies in order to address specific context and task goals. This appears to be in line with Oscar's assumption

that teaching children was beneficial for him to acquire pedagogical expertise. In a similar way, other participants also reported that teaching children was beneficial to their pedagogical development. How the teaching of children contributed to participants' pedagogical development is explored in the next section.

Children

Veronica reported that teaching children helped her to develop better awareness in planning for the unexpected. Awareness for the unexpected allowed her to search for more functional solutions to teaching tasks, whenever the original plan did not address expectations occurring during sessions, as can be read below.

> …and teaching little ones. … That taught me about having a thousand things in your toolbox, so that you are prepared. Have lots, and lots, and lots of different things you can do. …because you never know when it does not work, or… …you have to have kind of shift. That allows you… If you have got the thought, if you have got enough planned… …then, you can jump them, or you can take a few steps back. But, there is a journey, and there is some sort of clarity, and it will be ok.

Veronica's report above suggests that she was exposed to the unpredictability of teaching and that she was capable of adapting her behaviour to changing environmental constraints and teaching task requirements. Davids (2012) argued that adaptive behaviour is important because the unpredictable nature of environmental, task and individual constraints might change every time an action is performed. Adaptive behaviour emerges from the interaction of physical and informational constraints conditioned by a particular task or environment (Warren, 2006). This adaptive behaviour appears to be present in Veronica's statement because under the influence of constraints (i.e., "teaching little ones") Veronica can demonstrate an adaptive teaching behaviour (e.g., "then, you can jump them, [the original teaching plan] or you can take a few steps back"). This suggests that although the variability associated with teaching children made her journey to pedagogical expertise varied and unpredictable, teaching children developed the ability to adapt her behaviour to changing environmental constraints and teaching task requirements to effectively teach children (e.g., "…teaching little ones. … That taught me about having a thousand things in your toolbox").

The last part of Veronica's report in reference to her pedagogical journey (e.g., "But, there is a journey, and there is some sort of clarity, and it will be ok"), denotes that, indeed, for her, acquiring expertise occurred over time. Every moment, or event, even small, might have been important to Veronica because it may have introduced random variability. When individuals are exposed to random variability, they are naturally forced to explore a range of behaviours (Kelso, 1995). This behavioural exploration is critical for behaviours to evolve and transit from a specific pattern to a new adaptive pattern, allowing for learning to occur (Chow, et al., 2011). For instance, within the framework of ecological dynamics and the constraints-led approach, Hristovski and colleagues (2006) investigated if manipulating the distance to the target in the sport of boxing would afford the emergence of new boxing patterns in novice boxers. The distance between the punching bag and the novice boxers incorporated significant variation and the findings showed that the varied distances generated new boxing patterns, such as jabs, hooks and uppercuts. Boxers had the capability to explore the emerging perception of striking the punching bag. This perception led to a variety of selected movement actions and changes in how they perceived and acted during task execution. Their perceived efficiency changed as distances to the punching bag changed, and was associated with the potential for engaging in particular boxing actions (Hristovski, et al., 2006). Hristovski and colleagues' (2006) research shows that individuals are capable of adapting to changing circumstances and of developing new patterns of behaviour. This gives support to the claim that Veronica was capable of adapting her behaviour to changing environmental constraints and teaching task requirements, as can be understood from the following quotation (e.g., "because you never know when it does not work……you have to kind of shift").

Finally, Veronica's report proposes that after dealing with the unexpected during her teaching practice, some sort of consciousness was achieved (e.g., "there is some sort of clarity"). "Clarity" is here interpreted as the stable and adaptive behaviour that is emergent from the interaction between the environment and individual (Warren, 2006), and in terms of expertise, is demonstrative of an individual's capacity to achieve and maintain stable performance outcomes during unstable environmental conditions (Davids, et al., 2015).

The variability associated with teaching children, as per Veronica and Oscar's accounts, suggests that teachers' knowledge and effectiveness is enhanced by the exploration and development of a range of pedagogical skills. This is in line with research on teaching children that argued that children's learning varies according to variables such as linguistic, cognitive, physical, emotional, and social factors (Horowitz et al., 2005). Horowitz and colleagues (2005) argued that, due to the complexity inherent in children's development, interaction with children fosters observational skills and the ability to analyse children's learning in a developmental context. As a result, teachers of children are able to select appropriate teaching strategies to support children's learning (Horowitz, et al., 2005). This suggests that Oscar and Veronica's pedagogical expertise was enhanced by having to address those variables inherent in children, and exemplifies how teaching children improved their pedagogical development. Nevertheless, teaching children might not always be teachers' preferred group of individuals to teach (Gilbert, 2005). For example, Alexis reported not having had a preference for teaching children; she preferred to teach adults: "I do not like teaching children, I like teaching adults". The effect of teaching adults in the pedagogical development of participants is explored in the next section.

Adults

Adults are another particular group of students that participants mentioned as contributing to pedagogical expertise development. Alexis, as mentioned above, has a preference for teaching adults because she feels that she can communicate and interact better with adults.

> I always feel very lucky that I am working with people who are usually a bit older. Because I always feel that I can talk to them… …and share things with them. …when I want to try something, I like to tell them that I am trying this out, or I have got this idea… …I try and get them to help me workshop things. I find that they respond really well to that.

Alexis, as previously mentioned, has a preference for exploration; for instance, she acknowledged the significance of enjoying multidisciplinary collaboration with teachers from visual arts, music, and acting during her pedagogical development. The statement above suggests that Alexis might conceive that exploration of specific tasks' goals in dance is more favourable with adult students than with children.

Another participant, Elvira, similarly revealed a preference for teaching adults. She described that her rationale for choosing to teach adults is because she learns from adult students as they learn from her. To Elvira, this process is similar as going on a respectful journey with students; yet, she highlighted that this relationship occurs because she adopted a flexible and interactive teaching position.

> For me, ultimately, it goes down to a kind of respect for the student and the kind of sense of going on a journey with them. I always feel like I am learning as I am teaching. So, I adopt a position of thinking of myself as a person with an open system, rather than someone with a closed system. Because I, actually, get a lot of information back from the students. They are always giving me information on where they are, and what they need, and what they are doing. So, it is interactive. I think that is important.

Elvira stressed that this "open system" interaction between teacher and students is important because dance is a creative practice. Without interaction, it might be difficult to fully explore creativity in dance movement. Therefore, she emphasised that implementing a flexible and interactive relationship with her students is important in creative practice and ultimately leads to experiencing enjoyment during teaching events.

> …when I found that I have not enjoyed classes, it was with people who… …do not have that sense of interaction. For me, that would be the most critical part. Particularly, because it is a creative practice, movement is not something that can be fully ever pinned down because the body is always in flux. …it is never… …a stable entity. So, in dance, I think that openness is important.

The excerpt above suggests that Elvira feels enjoyment in relation to teaching experiences with adults; however, she made a distinction between which experiences were, and were not, enjoyable. She described not having enjoyed experiences where students did not interact: "…when I found that I have not enjoyed classes, it was with people who… …do not have that sense of interaction". This suggests that classes that are interactive seem to be beneficial to Elvira's pedagogical learning because students learn from her and, at the same time, she learns from students (e.g., I am learning as I am teaching). Secondly, according to Elvira, interaction is critical to explore "creative practice" in dance. As a result, analysis of Elvira's account

suggests that the interaction during teaching events has a facilitating role conducive to the development of creative practice and pedagogical learning.

In sport performance contexts, Hristovski and colleagues (2012) asserted that the role of interaction from a constraints-led approach is to increase the potential for the emergence of creative behaviours. It was highlighted that creativity is subjective and dependent on the idiosyncratic interaction between each individual and the environment (Hristovski, et al., 2012). This focus on the emergence of creative behaviours through the interaction between the individual and the environment suggests that children as well as adults are capable of developing creative behaviours. This is in line with dance literature on creative dance that qualify children and adults with similar capabilities of developing creative behaviours (Gilbert, 2015); and, with dance literature on the development of creativity, which argued that children can be as creative as parents, engineers, and businessmen (Tharp, 2003). Furthermore research on children and creativity showed that children can be interactive and creative in many ways (Torrance, 1972).

Torrance investigated 142 studies designed to test approaches to teaching children to think creatively and concluded that the most successful pedagogical strategies to explore creativity in children involve cognitive and emotional frameworks, motivation, appropriate learning structures, and opportunities for interaction with peers and teachers (Torrance, 1972). The above explanation suggests that Alexis and Elvira's preferences in teaching adults might not be dependent on their assumptions that adults might have tendencies to be more interactive and, therefore, more creative, than children. Their preferences might be influenced by specific task goals directly dependent on adults' specific interactive capabilities, which seemed to be different from children's interactive capabilities (Oliver, 2000).

Oliver claimed that patterns of interaction in class are affected differently by learners' age and context (2000). For example, Lindqvist (2001) argued that dramatic and literary forms of interaction are more conducive to exploring children's creativity because these types of interaction can be explored through playful activities, which are more appropriate to children's developmental stages. In contrast, adult learners do not need necessarily to engage in dramatic or literary forms of interaction because their maturational development allows the understanding of complex concepts and critical thinking (Garrison, 1991). Torrents and colleagues

(2013), for instance, explored movement creativity in undergraduate students throughout the implementation of metaphoric instruction. An example provided was from an activity where the teacher proposed that university students move like oil (Torrents, Castañer, Dinušová, et al., 2013). Children might have more difficulty in coupling the understanding of moving like oil to the production of creative movement. This suggests that Alexis and Elvira's preference to teach adults is because interaction with adults affords adult-oriented, higher order ways of exploring creativity in dance (Warburton, 2004a).

A second reason associated with Alexis and Elvira's preferences for teaching adults might be because interaction with adults seems to afford flexible relationships, where teacher and student cooperate at the same level, aiming at specific task goals. As stated by Alexis, she prefers to teach "people who are usually a bit older" because she believes that she "can talk to them… …and share things with them". Furthermore, her adult students also seem to be more tolerant and understanding during exploration of new subject matter. Alexis described that when she wants to explore new subject matter with adults, she verbalizes and asks for their cooperation (e.g., "when I want to try something, I like to tell them that I am trying this out… …I try and get them to help me workshop things"); whereas relationships with children might require less flexibility and more control because children might want to "have their own way, and test boundaries given by the teacher" (Kassing & Jay, 2003, p. 91). Thus, the preferences of Alexis and Roxanne for teaching adults might be because adults afford a particular type of interaction, which appears to be characterised by higher degrees of flexibility and lower degrees of control by the teacher. Therefore, it seems that adults, as per the experiences reported by Alexis and Elvira, engaged in spontaneous collaborative and flexible interaction and, by doing so, any controlling barriers were made redundant. As reported by Alexis, adults "respond really well" to interaction involving sharing and exploration; therefore, both teacher and student, as reported by Elvira, embark on a discovery journey (e.g., "going on a journey with them") with mutual benefits for teachers and students (e.g., "I always feel like I am learning as I am teaching").

University students

As previously described, participants' range of pedagogical professional experience was diverse; it entailed children, adults, amateurs, pre-professional,

professional and university students. As illustrated above, participants had different preferences for teaching different groups of individuals; nevertheless, common to all participants, was a preference for teaching university students. Participants reported that university students are a distinct group because university is usually the last stage before entering into the professional dance industry. Special attention therefore needed to be focused on industry needs in order to facilitate students' successful transition into the professional world of dance.

Dance industry

Participants reported being aware of the demands that university students may have from the professional environment, such as strong competition for jobs, and they reported factoring in that competitiveness to the education of university dance students. Veronica, for example, reported that there are only a few jobs available in field of dance; therefore, job scarcity made her to re-evaluate factors that might significantly impact on her teaching practice.

> …for me there is all these sort of things, particularly, in dance. …where there are not many jobs. So, there are, for me, many other messages that are underlying a lot of the stuff that we do every day.

Another participant, Samuel, shared his strategy to fit university students to industry needs. He continuously attends dance performances and visits dance companies to have an understanding of current industry trends, choreographers, and artistic directors. Subsequently, he reflects on his teaching and, wherever required, he makes the necessary adaptions to meet industry needs. Farrer (2014), in reference to dance companies, highlighted that they usually operate on distinct bases that are different from each other. This distinctiveness determines each dance company's operational processes in relation to performance and creativity (Farrer, 2014). This suggests that Samuel's approach of attending dance performances and visiting dance companies is a good strategy to pick up informational variables relevant to his teaching practice. He further expanded on the rationale supporting his approach to picking up informational variables, as can be read below.

> I am continually ensuring that I attend as many dance performances… …as possible. …to, actually, visit a company or watch a performance of that company… I am always keeping myself abreast of… …current trends. …it is through that I am looking at what are the requirements that artistic

> directors and choreographers are asking of their dancers. What is it that they are doing, and what are the trends that are emerging... So, after witnessing and experiencing that, I then go back to my teaching and, in particular, the class content or the movement vocabulary... I will reflect on whether what I am currently teaching is helping the student to get to that place where the artistic directors and choreographers are expecting their professional dancers to be at. If not, what are some of the things that I could look at, and get a better understanding… …in order to introduce that into the teaching.

The above excerpt suggests that the informational variables of the dance industry are a critical environmental constraint influencing how Samuel teaches university students because, as reported by Samuel, the definitions of subject matter (e.g., "the class content") and performance skills (e.g., "the movement vocabulary") are dependent on industry constraints, such as choreographers and artistic directors (e.g., "artistic directors and choreographers… …and what are the trends that are emerging". Artistic directors, choreographers, and trends are, therefore, specific environmental dance industry constraints that influence Samuel's teaching practice. Samuel additionally revealed how he acquires information: he observes (e.g., "witnessing"), and he experiences (e.g., "experiencing"). The following citation explains how those constraints impact on his teaching.

> That is how I redevelop class content, by seeing what those trends are... That are happening choreographically. I try and bring that into the teaching of technique, and try to give the students an understanding of that sort of things.

The above excerpt suggests that Samuel assesses industry needs by employing mechanisms of perception and action (Gibson, 1986); he perceives critical information (e.g., "seeing what those trends are") and subsequently engages in appropriate teaching action (e.g., "I try and bring that into the teaching of technique, and try to give the students an understanding of that sort of things"). Gibson (1986) explained that the interaction between the individual and the environment is emergent from the coupling between mechanisms of perception and action, and is regulated by specific information generated by individuals' actions in specific environments. In Samuel's account, the specific information that he perceives and facilitates his behaviour regulation is information concerning "dance performances" and "the requirements that artistic directors and choreographers are asking of their dancers". Subsequently he engages in appropriate action by reflecting about the

effectiveness of his pedagogical behaviour in order to meet artistic directors and choreographers' requirements for professional dancers (e.g., I will reflect on whether what I am currently teaching is helping the student to get to that place where the artistic directors and choreographers are expecting their professional dancers to be at). If Samuel's pedagogical behaviour does not help his students to meet artistic directors and choreographers' requirements he then changes his behaviour (e.g., "If not, what are some of the things that I could look at, and get a better understanding"). Finally, the data suggests that Samuel's pedagogical behaviour is continuous (e.g., I am continually ensuring that I attend as many dance performances… …as possible. … I am always keeping myself abreast of… …current trends") in order to obtain current information to help students in achieving artistic directors and choreographers expectations (e.g., "helping the student to get to that place where the artistic directors and choreographers are expecting their professional dancers to be at"). This is aligned with Gibson's (1986) ideas that perception and action are inter-dependent and recurring, that is, by perceiving environmental information an individual acts; and by acting, an individual perceives further information. To this extent, Samuel's account highlights that the coupling between perception and action is important because it provides a basis for explaining behavior in specific environments while an individual is trying to achieve a specific goal.

As described in Samuel's account, the dance industry seems to be a significant factor influencing his choice of subject matter and his approach to teaching. In fact, inter-individual regularities concerning the influence of the dance industry on participants' teaching behaviour were noted in the data. For instance, a particular dance industry constraint impacting on another participant's teaching behaviour appeared to be choreographers. Elvira reported that choreographers appear to have an inclination for dancers who have the ability to personally intervene in performance; therefore, she tries to develop individuals' awareness during teaching.

> …more and more choreographers are looking for dancers who have more awareness of themselves; personality. …and who can bring their own nuances to their performances. So, I think it is important that the students have a bit more of an awareness of what they are doing…

Elvira's insights are supported by previous research highlighting aspects of the interaction between choreographers and dancers (Arnold, 2000; Farrer, 2014;

Gardner, 2007; Stevens & McKechnie, 2005). Arnold (2000) proposed that there are two types of dancers: passive and active. The passive dancer is a submissive instrument, subject to the control of the choreographer where "individuality and initiative are neither wanted or encouraged" (Arnold, 2000, p. 89); in contrast, the active dancer is purposeful and capable of imaginative contributions in close collaboration with the choreographer. Given that dance companies might portray differing levels of choreographer's control and modes of interaction with dancers, developing dancers' awareness of these environmental aspects was judged as positive (Farrer, 2014).

From Samuel's data analysis, it could be understood that in order to effectively address constraints imposed by the dance industry, he picked up information from students. He was revealed to directly observe and engage in conversations with students during teaching events. It was additionally reported that he casually picks up information by interacting with students outside classes. These random observations happened whenever he interacted with students outside teaching periods because students and staff naturally share physical spaces, such as corridors and halls. This sharing of physical spaces allowed him numerous opportunities for picking-up information about students, as can be read below.

> Verbal communication. Just in the corridor talking, not necessarily in the studio.

The above excerpt suggests that Samuel interacts with students in formal (e.g., "in the studio") and in informal (e.g., "in the corridor") environments. Furthermore, it would appear that Samuel, additional to verbal interaction, complements student diagnosis with random observations of students to ascertain their level of maturity.

> You get a feel of the type of students or what type of person that is. Because I can… …look at a lot of things and take a lot of a things in. …I can listen to how two students have conversations together. What is the level of maturity there?

The excerpt above further suggests that besides verbal interaction, Samuel utilises visual and auditory perception to pick up information about students. Previous research into music teachers' education suggested that an important ability of effective teachers is the ability to communicate, along with the ability to engage in thorough and appropriate student diagnosis (Polk, 2006). Verbal communication

includes the use of voice and expression; and non-verbal communication includes the maintenance of eye contact and gestures (Polk, 2006). Woorons (2001) investigated the perceptual capacities of expert tennis instructors and argued that perception of expert instructors has shown they have four distinct characteristics: (1) they focus on events pertinent to student performance and learning; (2) they make extrapolations from perceptions; (3) they are observant to atypical occurrences; and (4) they perceive with a critical eye. In further research investigating the perception of expert sport teachers, Schempp and Johnson (2006) stated that the combination of those four characteristics described by Woorons (2001) provides the teacher with an enhanced perceptual ability that impacts significantly on decision making, and consequent students' learning.

The research by Woorons (2001) and by Schempp and Johnson (2006) suggests that Samuel's practices of perceiving students' behaviour in class and outside class are beneficial for improving his understanding and knowledge of students. Samuel further reported that observation outside teaching periods, in addition to observations within teaching periods, helped him to have a better idea about students' maturity. This is because observations outside classes provide information that might not be available to be picked up during classes. For instance, the information perceived outside classes was related to passion, practice and performance.

> The passion I can see, because they will be in here at 7am… …when they have got an 8:30am class. …warming up and going over exercises. … If you are not passionate about what you are doing, you will be coming here in the last minute. But they have got a drive and a passion. They want to improve. So, I see that. …the drive to continually improve. …not giving up. They will complete an exercise, and if it has not worked, they might go and come back and do it again. Or, when the class is finished, instead of racing out of the studio, they would spend another five minutes there, going over something that they actually had challenges with. Trying to practice and perfect. You pick up on all of this.

Samuel shared how he engaged in specific behaviours. First, he tries to understand the particularities of a specific group of students; secondly, he tries to deliver the most appropriate level of subject matter (i.e., movement technique) to that particular group of students.

> I suppose the only critical factors that come into play is having an understanding of the particular group of people that you are teaching. And then looking at what is the most appropriate level of technique that you deliver for that particular cohort of students.

Samuel tries to become aware of students' technical skill levels, strengths, and weaknesses in order to teach the most appropriate level of technique for that particular group of students.

> So it is becoming aware of where the student is at that point in time. What is their technical ability? What are their strengths and what are their weaknesses? Then, looking… …where that cohort fits into.

Analysis of Samuel's data facilitated an understanding of how he becomes aware of students' developmental levels (i.e., technical skill level, strengths, and weaknesses). From an ecological psychology perspective, Samuel's behaviour is explained within the processes of learning, as picking up affordances to regulate actions (Fajen, et al., 2008). Because affordances provide opportunities to act (Gibson, 1986), an individual's ability to identify critical variables determines effective performance in particular contexts (Davids, Renshaw, Pinder, Araújo, & Vilar, 2012). Explaining how individuals perceive and take advantage of an environmental array of information, is the aim of ecological theories of learning (Gibson & Pick, 2000).

Ecological theories advocate that learning involves simple changes that perceptual systems respond to, and Jacobs and Michaels (2007) described these changes as education of intention, the education of attention, and calibration. Education of intention directs the learner towards specific information that must be detected to support effective actions. A learner's intention is connected to a task goal. This is exemplified by Samuel's learning about industry constraints imposed on his pedagogical behaviour. However, to achieve the task goal (i.e., addressing dance industry constraints) Samuel needed to coordinate specific informational variables from the environment (i.e. dance industry). The process of moving from the dance industry range of informational variables to functional variables affecting the task goal occurs by educating the learner's attention. Educating the learner's attention refers to the process of attending to one or more functional variables (Gibson, 1986). This process happens when learners become more experienced and, in Samuel's

case, is exemplified by attending to useful variables such as artistic directors, choreographers, and trends. Perceptual attunement allows for the individual to select when, and which, functional informational variables to attend to in changing performance circumstances (Gibson, 1986).

Calibration refers to the fine-tuning of information to the individual's action capabilities (Jacobs & Michaels, 2007). Learning to calibrate occurs during practice and it facilitates perception of the environment in functional terms; that is, it allows the individual to discern what she or he can or cannot do during performance (Davids, et al., 2012). This is exemplified by Samuel's ongoing attendance to "dance performances" and visiting dance companies in order to calibrate dance industry "trends" as well as "requirements that artistic directors and choreographers are asking of their dancers". Industry trends and requirements from artistic directors and choreographers are specifying variables that discriminate what Samuel can or cannot do during teaching. Stoffregen and colleagues (1999) stated that individuals are capable of perceiving information concerning their own capabilities, and are also capable of perceiving information concerning significant others' capabilities. This is of particular importance because it suggests that Samuel is capable of perceiving how information can support his actions as well as his students' actions, which can be ascertained from the statement below.

> …after witnessing and experiencing that… [dance industry trends and requirements from artistic directors and choreographers] …I then go back to my teaching… I will reflect on whether what I am currently teaching is helping the student to get to that place where the artistic directors and choreographers are expecting their professional dancers to be at.

To Samuel, perceiving information variables is critical to have a better fit between teaching the subject matter and students' learning. To achieve this fit between teaching and learning, Samuel has developed perceptual attunement to the dance industry and to students. Perceptual attunement to students is inclusive of in-class and outside class perception, as illustrated below.

> So, I suppose, in a way, for me, they are always under surveillance. Even though they do not know they are.

The experiences and events described above suggest that university students acted as an environmental constraint facilitating participants' acquisition of

pedagogical expertise. The role of university students, directly constrained by the dance industry, was to facilitate participants' development of perception skills. Participants' teaching behaviours were regulated by the search for students' affordances (i.e., perception of technical development, strengths, weaknesses, and passion) as well as industry constraints (i.e., artistic directors, choreographers, and trends). Samuel's development of expertise is in line with the ecological dynamics and the constraints-led approach to expertise in sport, which is illustrative of how perceptual attunement occurs under the influence of ecological constraints (Davids, et al., 2015) resulting in the improved fit between the individual and its environment (Seifert, et al., 2013). The last factor reported by participants as influencing their teaching practice in higher education, was students' feedback. Students' feedback is described in the next section.

Students' feedback

Participants reported events associated with formal students' feedback in higher education as a social constraint influencing pedagogical development. Students' feedback forced changes in participants' pedagogical behaviour in relation to knowledge and skill development. For example, Samuel mentioned that his teaching changed because of students' feedback.

> …I found that my teaching was changing. … It was changing because, to this day, students have a survey. … All these questions about the teacher.

He mentioned that when students' feedback was implemented at his university, it created a conceptual change in the way students were perceived. Perception about students moved from their being perceived as learners to being perceived as clients, or customers (Browne, Kaldenberg, Browne, & Brown, 1998). This conceptual shift, from student to client, was perceived by Samuel as empowering students. Consequently, Samuel changed his teaching to satisfy the client.

> …the student was looked upon as the client. So, you have to please the client. So, everything was for the client.

Samuel felt that students' feedback anonymity gave the opportunity for students to write offensive comments, whenever they were not happy with the teacher, as can be read below.

> At that point of time I felt that it gave an opportunity for some of the disgruntled students, not all, to write some very nasty comments because it was anonymous.

Another participant, Veronica, had similar feelings about students' feedback as she described the experience as stressful and emotional.

> …student feedback… …all that nasty stuff that they can write, all that anonymous stuff… …when I first started teaching here [at university], I found it incredibly draining, and I found it incredibly hard to draw that line between what was the class and what was me… …and what was me being overly sensitive.

Students' feedback prompted Samuel in changing his teaching approach in order to address comments from students. This change in Samuel's teaching approach was not positive; and the more Samuel changed in order to meet demands from students' feedback, the lower the results Samuel got.

> So, I changed my way of teaching to please the client, if that makes any sense. …you would listen to the comments and then you change. The more changed, the more comments came. …I felt like I was now succumbing to the student. ...I started getting lower results from the surveys.

Samuel was unhappy with having to change his way of teaching to accommodate students' feedback because he felt that it was not beneficial for either the students or himself.

> …it was not, actually, benefitting anyone.

Upon reflection, Samuel decided to do a test, so he went back to the way he used to teach. Not that he taught always in the same way; he was careful in stating that his teaching was always evolving.

> Then I thought… …I am going to play an experiment. …I went back to the way I was teaching. This is the way I have always taught. …It is not saying that I teach exactly the same way. Of course, I am evolving…

He decided to change his pedagogical behaviour and deliver classes that required more from students. He challenged students and forced their limits. This change in the way Samuel taught was much appreciated by the students; and,

according to Samuel, they made it evident by posting qualitative evaluations in the student feedback.

> So, I played an experiment… The moment I went back to: 'No! I'm the teacher. This is what I feel you need, and I am going to deliver it this way, and I am going to push you'. My ratings went up. Because they said, we love Samuel's classes, we love being pushed and challenged…

It can be interpreted from Samuel's account that student feedback acted as a particular informational variable imposing constraints on Samuel's teaching tasks and influencing his behavioural dynamics. Behavioural dynamics can be analysed in reference to the time evolution of an individual's behaviour and can be described as a dynamical system expressed by a "vector field with attractors that correspond to stable task solutions, repellers that correspond to avoided states, and bifurcations that correspond to behavioural transitions" (Warren, 2006, p. 358). From this perspective, Samuel's teaching practice was constrained by students' feedback, which forced him to change his behavioural dynamics to accommodate the students' evaluation: "I changed my way of teaching to please the client". However, Samuel understood that this change was not beneficial either to him or to the students: "…it was not, actually, benefitting anyone". These changes correspond to behavioural states to be avoided and can be categorized as repellers (Warren, 2006).

The ecological psychology perspective emphasises that an individual needs to understand informational aspects that constrain behaviour because information closes the presumed gap between perception and knowledge (Gibson, 1986). Gibson (1986) argued that knowledge emerges from experiencing affordances from the environment. The experiential process is grounded in perception; however, it leads to individuals developing patterns of thought (Araújo, Davids, Cordovil, et al., 2009). Turvey and Shaw (1999) explained that knowing from an ecological perspective belongs both to the physical and psychological spheres, which is exemplified in Samuel's re-evaluation of his situation and consequent decision to go back to the way he used to teach. The decision to go back to the way he used to teach constitutes a bifurcation (Kelso, 1995), which in ecological dynamics terms refers to decision making and it represents a qualitative transition in the individual's behavioural dynamics (Araújo, et al., 2006).

Stoffregen and colleagues (1999) advanced how an individual can perceive scaled information in reference to others' actions and how this perceptual information informs their decisions and actions within the same environment. This provides support for Samuel's decision to go back to the way he used to teach. His decision appears to have emerged from his feelings about what the students' learning needs were (e.g., "This is what I feel you need"), which suggests that Samuel perceived that his teaching adaptations in response to the initial students' feedback were not aligned with students' real learning needs; thus, the drop in students' feedback: "getting lower results from the surveys". He therefore decided to explore the situation (e.g., "I am going to play an experiment") by returning to his particular style of teaching (e.g., "I went back to the way I was teaching"). This decision to move towards a familiar behavioural configuration of teaching represents a convergence to attractors, which, as previously explained, correspond to stable patterns of organization leading to functional task solutions (Warren, 2006).

Samuel's adaptive behaviour emerged from perceiving which actions were more conducive to achieving his teaching goals; therefore, he challenged students during classes (e.g., "I am going to push you"); by actively exploring task instabilities, he tried to locate its stabilities (Warren, 2006). Creating instabilities leads initially to phase transitions where learners experience non-functional behaviours as they adapt to the new constraints imposed on the task (Zanone & Kelso, 1992). Therefore, creating instabilities is advantageous for learning because it forces the individual to move away from strong and stable attractor states (Davids, et al., 2008). This account suggests that Samuel's task exploration was conducive to his finding a fit solution to the problem and it demonstrates the importance of perceiving information scaled to the action capabilities of others (Stoffregen, et al., 1999) in relation to task exploration. This is expressed by the fact that Samuel's ratings improved as a consequence of his task adaptations (e.g., "My ratings went up. Because they said, we love Samuel's classes"). Samuel consciously acknowledged the influence of students' feedback on shaping his teaching behaviour.

> It was an interesting experiment to go through. But, what was interesting is that I acknowledged that I started to change my way because of a certain situation. …students' feedback…

The above excerpt suggests that the role of students' feedback, acting as an environmental constraint, was to ignite awareness of Samuel's teaching behaviour. In the pedagogical literature, another process that might ignite teachers' awareness of their behaviours is peer review of teaching (Chism, 2007). Peer review of teaching is considered important in teachers' developmental processes because it improves quality of teaching by creating awareness of one's teaching behaviours (Bell, 2001; Hammersley-Fletcher & Orsmond, 2005). Furthermore, it has been argued that peer review of teaching is beneficial to facilitate change (Bell, 2001) as well as to refine teaching skills (Martin & Double, 1998). However, developmental schemes for peer reviews of teaching have been perceived as threatening (Shortland, 2004) and meaningless (Carter, 2008); therefore, although peer reviews of teaching might have the potential to develop teaching (Chism, 2007; La Lopa, 2012), this potential is rarely achieved because teachers from higher education infrequently engage in processes of peer review of teaching (Iqbal, 2013).

One barrier identified within developmental schemes of peer review of teaching is higher education academia's beliefs that the outcomes of peer reviews of teaching might be significant for career development (Iqbal, 2013). As a consequence, teachers might be reluctant to engage in peer review developmental schemes and they might possibly not be aware of their teaching behaviour. However, on the other hand, as pointed by Iqbal (2013), student evaluation of teaching might have more importance for teachers' career development. The link between students' evaluation and its impact on a teacher's career development further supports the role that student feedback might have on igniting awareness of teachers' behaviour in relation to their evaluation. It is this focus on teachers' evaluation, influenced by students' feedback, which appears to have facilitated Samuel's awareness of his own pedagogical behaviour.

Students' Summary

Participants reported how and why students' variability played a significant role in influencing pedagogical development. Oscar and Veronica mentioned that teaching children facilitated the development of a wide number of teaching strategies and tools to plan for and to address the unexpected during teaching events. Other participants, such as Alexis and Elvira, had a preference for teaching adults because they felt that adults allow for efficient communication and interaction. Efficient

communication and interaction, according to Alexis and Elvira, are important in dance because they facilitate creative exploration. Interaction seems to be even more important when it is enjoyable because, according to Elvira, enjoyable teaching events seem to be more conducive to creative development, which is valued in dance.

University students were a specific group being perceived as significantly shaping participants' pedagogical behaviour. Samuel explained how industry demands influenced his teaching, where he had developed awareness skills and abilities concerning industry trends as well as students' qualitative maturity in order to educate students to meet industry demands. These skills and abilities included searching for information that could provide better understanding about students' maturity. In so doing, Samuel mentioned employing verbal and non-verbal strategies. Furthermore, Samuel mentioned that industry trend information was utilised in order to assess, compare, and develop subject matter in order for his teaching to be aligned to industry demands.

Industry demands is an environmental constraint that, in this case, emerged as a collateral constraint because it was not part of the higher education environment where Samuel teaches. Nevertheless, it influenced Samuel's teaching practices and behaviour because he was forced to search for pedagogical knowledge and teaching strategies in order to match industry needs with students' developmental needs. Therefore, industry needs acted as an environmental constraint shaping Samuel's pedagogical development. Another environmental constraint that influenced Samuel's pedagogical development was student feedback. The role of students' feedback acting as an environmental constraint was to ignite Samuel's awareness to his teaching behaviour and to facilitate the exploration of his teaching practice.

5.2 TASK CONSTRAINTS

As previously discussed, task constraints refers to specific rules, equipment, instructions, and relates to the goal of the task. To this extent, ballet and contemporary specific rules emerged from the data as task constraints shaping the acquisition of pedagogical expertise. The literature categorised ballet and contemporary as different genres, each with specific characteristics and rules (Hammond & Hammond, 1979; Kassing & Jay, 2003). In general, technique in ballet is more structured than in contemporary (Craine & Mackrell, 2010), even if in some

cases contemporary technique can be highly codified (e.g., Cunningham and Graham technique) (Bremser & Sanders, 2011). The literature has suggested that these different modes of structuring have different implications for task organisation in ballet (Foster, 2010) and contemporary (Erkert, 2003). Data analysis identified that ballet, as well as contemporary dance rules, constrained participants' development, implying different modes of acquiring pedagogical expertise.

Ballet's influence was noticeably different from contemporary in how it influenced participants' pedagogical development. Participants reported that ballet has different 'schools' of training (e.g., Italian, Russian, English, and French), has a strong structure, and is prescribed according to age. These characteristics of ballet are in line with the ballet characteristics outlined in the literature focused on ballet historical development (Hammond, 1984; Homans, 2010; Kassing, 2007). Participants additionally revealed that according to their own experience and knowledge, ballet had experienced little development over time. Participants' perceptions about ballet's insignificant development over time are also supported by the literature (Hammond & Hammond, 1979; Morris, 2003).

In contrast, participants reported that contemporary has a constant developmental nature, and does not encompass specific subject matter, which makes this genre more fluid. They revealed that inspiration for contemporary movement aesthetics can be obtained from any type of movement, whereas ballet follows specific types of movement that shape its aesthetics. Participants mentioned that the rules involving ballet and contemporary had a specific influence on how they learned and acquired pedagogical knowledge and skills. For example, they mentioned that these rules influenced knowledge acquisition, identity, competence, and teaching strategies. These rules, and how they influenced the acquisition of participants' pedagogical expertise, are explained below.

5.2.1 Ballet Rules

The literature describes ballet as a formal, structured, and prescribed dance genre (Grant, 2012; Greskovic, 2005; Warren, 1996). These descriptions are aligned with participants' ideas about ballet. For example, Samuel mentioned that ballet has a very strong structure, following a specific sequence.

> …ballet technique has a very strong structure. The exercises at the bar, and how they follow, one from each other. So, there is a progression moving into the center.

Another participant, Oscar, also commented on ballet having a prescribed subject matter sequence. He provided the example of the Vaganova (i.e., Russian) ballet style, matching different levels with specific ages.

> I learnt how to teach the Vaganova syllabus dance and there is a whole specific list for which steps should be performed at which age. There are eight different levels of classes to learn. … I learnt it off by heart. So, I sort of know which steps should be performed by which age group and which level. …If you are teaching ballet, that is the steps to teach.

The excerpt above suggests that in ballet there is a matching of levels and ages of individuals in terms of teaching. From an ecological perspective, this matching represents rules and is a task constraint imposed on practice because these rules define at which age an individual should start ballet. This type of approach emphasises the idea that an individual needs to start ballet practice at a certain age in order to acquire mastery (Vaganova, 1969; Van Rossum, 2001). However, previous research on sport expertise has shown that the relationship between age and practice might vary considerably, and that early specialisation during initial periods of development has been associated with a range of undesirable outputs (Baker, 2003; Wiersma, 2000).

For instance, Wiersma (2000) argued that the delimited variety of skills practised during early sport specialisation is detrimental to motor skill development, and can have an impact on the likelihood of long-term involvement in physical activity. Furthermore, early specialisation could impact negatively on the development of social skills because if individuals spends the majority of time available in training, they may not have enough time for developing social relationships impacting on the development of social skills (Wiersma, 2000). Another aspect that can be implied from Oscar's report above is that ballet is prescribed (e.g., If you are teaching ballet, that is the steps to teach"); nevertheless, there is a certain degree of development over time.

> …it is evolving, but these are the steps that you have to learn. So, if I want to teach the steps, you always go back. And that is how you teach because there

> is no other way of really performing it. Those are the steps. If you are worried about how do you get to that end harder step, you always have to go back to that beginning step.

Oscar's reports above suggest the idea that ballet has a central structure; yet, there is a certain degree of evolution. This evolution of ballet could be found in the literature, for instance, in the example of George Balanchine's approach to ballet. Hammond and Hammond (1979) described that after the romantic period, where the emphasis was on mastering aerial space, Balanchine introduced maximum linear extension, which is generally characterised by wider physical movement, and specifically by an increase in the variety and motion of the limbs. This innovation was implemented between 1930-40 and it can be observed at the present day (Hammond & Hammond, 1979; Walczak & Kai, 2008). This further supports the idea that although ballet evolved over time, its evolution was minor (Kassing, 2007). For Oscar, the stable nature of ballet provides better support for teaching because there is very little subject matter deviation, when matched with contemporary.

> But, ballet, I find it more reassuring because you have those specific steps that there is no deviation from. You have to do it. It makes it easier to teach I find it, compared to contemporary.

Ballet has different techniques created by different individuals such as Vaganova, Cechetti, Blasis, and Balanchine amongst others (Foster, 2010). Each technique differs from the other; nevertheless, as a genre, it is formal and has set rules. Interpretation of data has suggested that these rules and formality constrain ballet teaching specifically. The following section describes how ballet task constraints, in the form of rules, influenced participants' pedagogical development.

The influence of ballet rules on pedagogical development

Hilda, for instance, described that the formalised nature of ballet prompted her learning about how to teach ballet. She reported that learning the technique and complementing this learning by observing other ballet teachers teaching was sufficient for her to acquire skills to teach ballet.

> Ballet is… …a very formalised style. You can, sort of, learn technically, and have a good eye, and learn by watching. You can learn any teaching by watching…

Hilda's report proposes that further to being able to learn ballet technique as a performer, she was additionally able to learn about how to teach ballet. She asserted that learning how to teach ballet was because she had "a good eye". It would appear, therefore, that Hilda had the ability to perceive and acquire critical pedagogical skills to teach ballet. This proposes that it was through intertwined mechanisms of perception, action and cognition (Gibson, 1986) that Hilda was able to acquire environmental knowledge and to explore alternative approaches to ballet teaching and training. From an ecological perspective, *knowledge of* the environment is literally grounded in mechanisms of perception and action (Gibson, 1986). In relation to learning, such as in Hilda's case, knowledge of the environment (i.e., the capacity of an individual to perceive environmental properties in relation to her or his body and actions capabilities (Gibson, 1966)) facilitated knowing how to regulate action. She was able to detect specifying information (i.e., affordances of other teachers and of movement principles) in relation to the teaching process. As a result, it would appear that she was able to learn how to teach by perceiving: "You can learn any teaching by watching". Through engaging in direct exploratory behaviour in a specific environment, an individual's perceptual systems become gradually attuned to specifying information; consequently, learning occurs (Jacobs & Michaels, 2007).

The process of learning from previous teachers, as reported by Hilda, seems to be common in learning how to teach ballet and in learning how to teach dance. Earlier research has suggested that learning from previous teachers appears to be a common process of learning how to teach dance due to the kinaesthetic nature of dance (Hanna, 2002). Traditional processes of becoming a ballet teacher involve: acquiring ballet technique; perceiving previous teachers' teaching skills; and acquiring those skills through modelling (Lakes, 2005; Paskevska, 1992). This process seems to fit Hilda's pedagogical acquisition, with one exception: Hilda mentioned that she did not pursue the ideal of perfection portrayed through modelling in ballet.

> I am looking in the mirror and that is the ideal, and that is how I was taught.
> But, I would never teach that way, never.

The excerpt above suggests that although Hilda was taught to achieve the movement ideal through modelling, she did not embrace modelling in her teaching. An explanation of Hilda's rejection of teaching aiming for the ideal, can be advanced

by Rietveld and Kiverstein's (2014) adoption of Wittgenstein's (1953) concept of 'form of life' to understand the applicability of affordances and adequacy of behaviour in an individual's life. As previously discussed, specific physical, social, cultural, and academic features may be present in a dance teacher's environment, which can constrain and afford particular pedagogic behavioural patterns (Chappell, 2007b; Stinson, 2010).

Rietveld and Kiverstein (2014) argued that the affordances that an environment offers to an individual are conditional on the individual's skills and on her or his form of life. The term 'form of life', as explained by Rietveld & Kiverstein (2014), refers to the stable and consistent patterns of behaviour of an individual in a certain context, which might be created through social and cultural interaction with other individuals A form of life, within these terms, is socio-culturally constrained because the skills that individuals acquire throughout participation in skilled practice, are those skills needed to act in accordance with the norms of that specific practice. The way an individual develops skills through engagement with particular aspects of a particular environment, while being guided by more experienced individuals, refers to the normativity of affordances (Rietveld & Kiverstein, 2014).

To this extent, Hilda's account is similar to Zeller's (2009) account of the pedagogical development of Maggie Black, a distinguished ballet teacher and coach. Both accounts are here discussed as examples to illustrate the concept of normativity of affordances in reference to pedagogical development. Hilda reported having learned how to teach from observing her previous teachers. For instance, she learned from her previous teachers about the use of imagery (e.g., what Grace Morales had said, images that she had given… … people learn from imagery, and metaphor, and illusion"); effective choice of exercises (e.g., exercises that I thought, really made my body feel, that it was being developed); and, how to sequence movement (e.g., I learned was how people sequenced movement). This suggests that the perception of the pedagogical behaviour of Hilda's previous teachers was important to her awareness of which specific teaching features (i.e., affordances) could be important in order to become an effective ballet teacher. In the same vein, it was described by Zeller that Black's pedagogical approach had similarities with the approach of her previous dance teacher (e.g., Audrey de Vos (1900-1983)). For instance, the system of teaching used by Black's previous teacher emphasised central alignment, use of

weight in heels, individualised instruction, accepting dancers of non-ideal physique, having classes with a two-hour time frame, and avoiding repetition (Zeller, 2009). All of these features of Audrey de Vos's dance teaching practice could equally be acknowledged in Black's pedagogical approach. This suggests that Audrey de Vos's pedagogical behaviour was important to Black's perception of which particular aspects of the pedagogical environment (i.e., affordances) could be important to engage with, in order to become an effective ballet teacher.

It was argued by Rietveld (2008) that the concept of normativity applicable to a skilled individual's engagement with affordances depends on the individual's ability to distinguish suitable from unsuitable, ideal from worst, superior from inferior, and appropriate from inappropriate activities in a particular environment. This type of normativity refers to situated normativity and can be comprehended as the normative features of embodied reasoning in unreflective skilful action because it is the specific situation that makes an individual's activity appropriate or inappropriate (Rietveld, 2008). Rietveld and Kiverstein (2014) further argued that the acquisition of skill is accomplished in socio-cultural environments and that to some extent there is agreement in what the members of a particular socio-cultural practice do. However, they additionally stated that the patterns of behaviour depend on an individual's continuous adjustments to the affordances of specific and concrete material settings (Rietveld & Kiverstein, 2014). Perhaps it was the need to continuously adjust to the affordances of specific and concrete material settings that prompted Hilda to not embrace modelling and the achievement of the movement ideal during teaching. Hilda reported that it was by experiencing principles of movement that she understood the need to explore other approaches for effective teaching, as can be read below.

> …teachers need to understand, and underpin… …these principles of movement… …it was a way to think. How can I teach better, and how can I think about other approaches…

The excerpt above suggests that Hilda's adequacy of behaviour (Rietveld & Kiverstein, 2014) was underpinned by aspects of embodied cognition, prompted by the perception and exploration of those "principles of movement" during her teaching practice. Furthermore, it would appear that her actions were goal-oriented as can be read in the excerpt below.

> …now you have to be able to do lots of things. So, your training [and teaching] needs to be adaptable. You need to train adaptive dancers. …if you look at the repertoire from ballet companies… …everybody, all dancers, now, need this.

The excerpt above suggests that Hilda was able to perceive certain training and teaching needs emanating from ballet companies (e.g., "You need to train adaptive dancers"); therefore, those "principles of movement" represented the way to achieve the goal of training adaptive dancers. Hilda's account shows how environmental knowledge is resultant from the intertwined processes of perception, action and cognition steering towards functional goals. This illustrates how Hilda's teaching practice was different from her previous ballet teacher's teaching practice of aiming for the ideal movement form through modelling.

In a similar way, Hilda's adequacy of behaviour and form of life could be identified in the previous example of the pedagogical development of Maggie Black (Zeller, 2009). Black's pedagogical form of life assimilated particular properties acquired from her previous teacher; however, the way Black acted on individuals was different from her previous teacher's approach. For instance, although Audrey de Vos and Black shared an emphasis on central alignment, Audrey de Vos's focus was explicitly through the muscles of the inner thigh, while Black concentrated on the vertical placement of the body as a whole (Zeller, 2009). Together, Black and Hilda's accounts suggest that, although individuals' behaviour may exhibit behavioural resemblance to that of their previous teachers, acquired through socio-cultural practice, as they mature, the individuals' forms of life develop patterns of behaviour in relation to the affordances of their specific material settings. These accounts exemplify the influence of previous teachers and the normativity of affordances in the pedagogical development of both Hilda and Black; furthermore, they additionally exemplify the role of the environment in shaping their expertise.

Ballet's traditional teaching style

The formality associated within ballet genre, besides providing a stable structure for teaching, also seems to predispose a controlling teaching style (Morris, 2003). A controlling relationship is established between teacher and students, where the teacher is the master of knowledge (Lakes, 2005). In this type of relationship students participate in teaching and learning events without questioning; hence, they

learn passively, becoming dependent on the master's knowledge (Lakes, 2005). This phenomenon was reported by Alexis as she described how this authoritarian and controlling perspective influenced her ideas about ballet teaching styles.

Mosston and Ashworth (1990) proposed a unified theoretical framework to develop teaching styles according to specific learning goals. Their theory proposes a collection of options, from command to discovery, in order to support teachers' practice. Mosston and Ashworth's (2002) teaching styles framework is based on the decisions that need to be made by the teacher during the processes of teaching and learning. Within the traditional style of ballet teaching, it is common for the teacher to be the single decision-maker and to be in control of how teaching occurs (Lakes, 2005; Morris, 2003). This controlling style of teaching refers to the command style (Mosston & Ashworth, 2002) and, within dance pedagogy, Purcell (1994) and Gibbons (2007) suggested that this style is appropriate for teaching situations where subject matter is prescribed and no freedom is given to creativity and exploration. However, they also suggested that when the teaching and learning goals are associated with creativity and discovery, other teaching styles (e.g., divergent and guided discovery) are more suitable because within those styles the onus of decision making is shifted from the teacher to the learner (Gibbons, 2007; Purcell, 1994). The benefits of shifting decisions to the learner are expressed through the learner's ability to establish relationships within the subject matter; furthermore, processes of discovery empower the learner to find solutions by himself, and the learner might also be able to transfer his knowing to other situations (Mosston & Ashworth, 2002). Alexis reported that her ideas about how a teacher needs to be, were resultant from her understanding of their being in total control during teaching events, and of their giving the perception of being knowledgeable about everything, and having to follow specific rules. She felt uncomfortable within such a role; therefore, she experienced personal conflicts in perceiving herself as a teacher, as per the quotation below.

> …it took me a long time to identify as being a teacher and I was, sort of, reluctant to take on that. …I had a very specific idea that a ballet teacher had to be in a particular way. …that you needed to know everything, or… You needed to be in control of your classes… …there were these rules… …ideas that I had, that a teacher needed to be. I did not feel like I fitted those things. So, I… …resisted identifying with that.

The above excerpt from Alexis shows that her perception was that there was an idealised concept of what constituted a ballet teacher (e.g., "a ballet teacher had to be in a particular way"). Furthermore, ballet teachers needed to "know everything" and needed to be "in control of … classes" because there were "these rules". Enghauser (2003) highlighted how traditional teaching practices emphasised control and fixed prescribed exercises over time as accepted standards for pedagogical practice. It was suggested that these standards for pedagogical practices become embedded in individuals' shaping their perception about how processes of teaching should occur (Enghauser, 2003).

From an ecological perspective, interpretation of Alexis's experience would assume the need to "know everything", always be in "control", and following "rules" as behavioural repellers (Warren, 2006), delimiting Alexis' self-perception of being a teacher. Repellers are associated with instability and correspond to states to be avoided (Warren, 2006). Accordingly, Alexis avoided controlling and authoritarian teaching behaviours. Nevertheless, later, at a different point in time, Alexis did identify herself as a teacher. She explained that what contributed to her moving away from the ideal of how a ballet teacher needed to be, was exposure to the variability of teaching practice.

> …it is really only… …when I mostly have been teaching in so many different aspects. I have been teaching… …more theoretical subjects… …all the ballet classes… …teaching in many, many contexts, that I am starting to… …identify myself as being, now, a teacher. …the breadth of that… …has more substance as a teacher, for me.

The excerpt above suggests that experiencing task variability ("teaching in so many different aspects") as well as environmental variability ("teaching in many, many contexts") provided a more satisfactory behavioural framework for Alexis. Being exposed to variability, within a constraints-led perspective, is inevitable due to the influence of constraints unique to each individual shaping the individual's behaviour (Davids, Glazier, et al., 2003). Exploring variability facilitates an individual's adaptation to a range of constraints imposed on the individual, over different points in time, and the emergence of varied functional tasks solutions during action (Davids, Glazier, et al., 2003). Action patterns might exhibit regular traits; however, the individual is not sealed into rigid stable solutions (Warren, 2006).

Within this perspective, the interaction of constraints allows for coordination and control to emerge, while the individual discovers a range of functional solutions to the task (Davids, Renshaw, & Glazier, 2005). These solutions are known as attractors (Warren, 2006) which, in Alexis's account, are expressed through stable teaching behaviours allowing goal-achievement and therefore, a more satisfactory behavioural state as a teacher.

However, it is here noted that although Alexis appeared to have had a pedagogical orientation towards exploring pedagogical variability, this exploration appears to have been fortuitous and emergent during practice. As identified in the data, Alexis was immersed in an environment where she could explore interdisciplinary interaction with individuals from different fields such as dance, music, visual arts and acting (e.g., "we would have all different people working interdisciplinary") and her account proposes that she learned from this interaction (e.g., "it does not matter what area they are in, because I feel like there is too much to learn"). She only recognised herself as a teacher through engaging with a range of teaching practices "in so many different aspects". She taught practical as well as "theoretical subjects"; furthermore, she taught several "ballet classes… …in many, many contexts". According to Alexis, it was "the breadth of that" (i.e., exploring behavioural variability during teaching practical and theoretical topics in many contexts) that allowed her discovery of teaching behavioural stability, which, in turn, facilitated her empowerment as a teacher. This suggests that exploring variability in teaching is a viable alternative for facilitating the emergence of pedagogical expertise because it allows individuals to find unique functional solutions to their unique set of constraints.

Ballet's traditional master-apprentice interaction

Another factor that impacted on participants' teaching practice and appears to have influenced participants' pedagogical development was dealing with the traditional idea that ballet teaching is implemented through a master-apprentice relationship. Veronica, for instance, reported that the traditional idea of master-apprentice from ballet constrains her teaching at university because students arrive at university influenced by ballet schools that follow the traditional master-apprentice approach. This master-apprentice approach appears to have influenced students' ideas about how a dance teacher should behave. That is, the teacher is perceived as

the one in total control, and with all the knowledge. Veronica mentioned that these students' perceptions pose problems because they might perceive her as being the master of knowledge, as can be read below.

> …I think that I have got a whole lot of experience in contemporary dance. But, I do not know everything that there is to know about contemporary dance. …and, I do not want my students to think that either. I am their teacher, I am not God. … I think that is really important because.. …from a traditional ballet school, ballet syllabus… …master-apprentice kind of approach… This is how we learn. It is commonly what is done. …and you get them here [at university], and they are still really attached to that master… …the ballet school teacher. …and sometimes that can get us, tie us in knots.

The above excerpt suggests that university dance students mostly follow the traditional style of ballet teaching before entering tertiary education. Previous research suggested that traditional dance teachers usually portray an authoritarian teaching style (Jackson, 2005; Lakes, 2005), which is similar to the command behaviour style of teaching (Mosston & Ashworth, 2002). In the command style of teaching, the teacher is the only decision maker. The objective of teaching subject matter is for learners to achieve a predetermined model reproduction, by immediate performance; to achieve performance precision; and, to maintain cultural traditions (Mosston & Ashworth, 2002). These types of teaching practices usually start from a young age (Alexias & Dimitropoulou, 2011) and last for many years of practice (Jackson, 2005). However, it has been suggested that a negative consequence of the command style of teaching is that dance teachers might exhibit frustration if learners do not acquire immediate mastery of subject matter (Lakes, 2005). Often, learners' behaviours become associated with these types of practices associated with the pursuit of an ideal movement form (Alexias & Dimitropoulou, 2011). Furthermore, it has been argued that after many years immersed in these types of teaching practices, dancers develop a particular idea about how they should behave (Bettle, Bettle, Neumarker, & Neumarker, 2001); therefore, it appears that this idealized conception is acquired through being exposed to particular cultural influences within the teaching/learning environment (Jackson, 2005).

Previous research from sport and physical education has demonstrated how culture is a constraint determining learners' responsiveness to teaching styles centred

on teachers, rather than on learners (Moy & Renshaw, 2009; Moy, Renshaw, & Davids, 2014). Moy and colleagues (2014) investigated 49 first year pre-service teachers within their physical education teacher education (PETE) course in Australia and found that the predominant approach used by these individuals was based on the reproductive approach. This is the traditional approach to teaching physical education and sports, and teaching practice usually starts with a visual demonstration of the ideal movement output to achieve, followed by repetitive practice using isolated drills; and corrective feedback is given by the teacher (Moy, et al., 2014). It was argued that after spending many years observing physical education teachers in action, pre-service teachers acquire specific views of what constitutes good pedagogical practice. That is, pre-service physical education teachers believe that they know what they need to be able to do to in order to teach (Moy, et al., 2014).

A similar cultural pathway has influenced dance teachers' education because since the twenties and thirties decades, the evolution of dance was associated with and regulated by physical education. This was the case in the USA, where dance was included in physical education programs for women (Bonbright, 1999) through the pioneer work of Isadora Duncan, Ted Shawn, Martha Graham, and Ruth St. Denis (Dixon, McIntosh, Munrow, & Willest, 2007). A similar process was implemented in England, where dance was associated with educational gymnastics (Fowler, 1975). However, according to Fowler (1975) the English educational gymnastics programs depicted a change from the traditional command styles associated with physical education because they incorporated concepts from Laban's modern dance. This new educational approach encouraged learners' exploration of subject matter, rather than having a strong orientation toward teacher control (Fowler, 1975). Therefore, in this new educational approach, learners were encouraged to learn through self-discovery and problem solving strategies. This teaching style represented a shift from the command style of teaching towards a student centred approach, in line with the framework that Mosston (1966) would propose later, in the sixties. Unfortunately, with the advent of men entering in large numbers to the physical education profession in the fifties, physical education as well as dance suffered another change. Physical education was consolidated into its own educational programs and dance found a place within the performing arts field (Bonbright, 1999). The union of the

abovementioned cultural constraints with current traditional pedagogical practices in ballet, where individuals learn mainly from previous teachers (Fortin & Siedentop, 1995; Lakes, 2005; Paskevska, 1992) seems to be the reason for Veronica's students to form preconceptions about how ideal processes of teaching and learning should be.

Fortin (1998) argued that it is from observing teachers during large periods of time that learners acquire a particular form of behaviour; furthermore, it has additionally been argued that behaviours which aim for an ideal to be achieved (Alexias & Dimitropoulou, 2011) are maintained when learners become ballet teachers (Morris, 2003). To this extent, Veronica reported that one factor that forces her behaviour away from the ideal is the undefined nature of contemporary because, in contrast to ballet, contemporary does not have a pre-defined structure. Therefore, as per the citation below, she needed to create and develop her own structure.

> Contemporary is difficult because, unlike ballet, there is no set language. So, you can grow old gracefully teaching ballet and not have to get off your seat. …in contemporary, that is near impossible because of all the floor work. There is not a language; it is your own language.

In order to develop her "own language", Veronica declared she had explored a wide range of movement aesthetics. This was achieved by undertaking dance classes and observing other dance teachers in situations characterised by a variety of proficiencies and capabilities. It was the perception of a range of movement variability that provided Veronica with multiple pedagogical solutions to address students' learning.

> …from doing lots of classes with other people. Yes, doing lots of classes. So, observing and experiencing other teachers… …was pretty important to my learning. …particularly, in situations where there was a range of experiences and abilities. I think that it is a particular high end skill, teaching skill…

The statements above suggest that Veronica's pedagogical behaviour is emergent from "observing and experiencing other teachers" in action "particularly, in situations where there was a range of experiences and abilities". This suggests that Veronica was able to understand and therefore decide on how to acquire the skills that she needed to stabilize effective teaching behaviours. From an ecological

approach, behaviour emerges from an individual being able to exploit informational and physical constraints with an upcoming intentionality (Araújo, Davids, Chow, & Passos, 2009), which in Veronica's account refers to exploring task variability during contemporary teaching. The attainment of a specific behavioural goal involves selecting an initial condition as a precursor to the attainment of a final condition (Shaw, 2001). In Veronica's situation, this appears to be exemplified by her choice of perceiving "other teachers". However, a significant feature is that during the course of action the informational sources detected and utilized to regulate action must become more specific in reaching the intended goal (Araújo, Davids, Chow, et al., 2009). This information specificity is expressed through Veronica's statement in reference to which sources of information were more conducive to goal attainment (e.g., "particularly, in situations where there was a range of experiences and abilities"). This suggests that from all situations where Veronica perceived other teachers, only the ones where other teachers exhibited "a range of experiences and abilities" were considered useful to goal attainment. This specificity of information detected is used to identify, from all action possibilities, only the ones critical to goal attainment (Shaw, 2001). As Veronica reported, perceiving teachers from a variety "of experiences and abilities" was important in her learning how to become a teacher: "was pretty important to my learning". Veronica's case therefore exemplifies how learning emerges from being immersed in a range of situations requiring interrelated decisions and actions over time (Davids, 2012).

5.2.2 Contemporary Rules

Contemporary, in contrast with ballet, has an undefined, ever-evolving nature (Bremser & Sanders, 2011). Contemporary emerged because the aesthetics of ballet were not appreciated by all individuals in the field of dance (Hammond & Hammond, 1979). Hammond and Hammond (1979) suggested that it was due to the dissatisfaction with ballet that individuals, for example, Martha Graham and Merce Cunningham, created their own contemporary techniques. Graham and Cunningham's techniques are not prescribed in the sense of ballet techniques; yet, these techniques are characterised by certain principles, codified movement, and philosophical approaches (Foulkes, 2002). Furthermore, there are many more contemporary techniques, each with its own principles and philosophical approach (Albright, 1997; Bremser & Sanders, 2011).

The array of contemporary techniques poses difficulties in defining what contemporary is; however, one aspect that can be established in contemporary dance is the difference between techniques that are based in codified movement (e.g., Graham technique) and techniques that are based on principles of movements (e.g., Skinner releasing technique). The Graham technique includes codified movement mainly based on the torso's strong release and contraction through spirals and rotations; furthermore, weight shifts, and oppositional forces in the body are used to generate sharp, angular movement, which characterises the dance as extremely dramatic (LeFevre, 2012).

In contrast, the Skinner releasing technique is a contemporary dance technique based on a system of kinaesthetic training aiming the development of perception and movement performance (LeFevre, 2012). It utilises metaphors of the kinaesthetic experience of technical principles and focuses on the development of alignment, flexibility, speed, strength, technical clarity, movement efficiency, and musicality. Through unstructured improvisations, it releases body tension and generates effortless movement (LeFevre, 2012). In this thesis, both contemporary techniques based on principles of movement as well as in codified techniques, were reported as having an influence on the pedagogical development of participants. Hilda, for instance, reported that, if individuals want to teach a certain technique, they need to master it, as can be read below.

> …you must be an expert in technique. You cannot go and teach a Graham class if you have not done Graham for years and years and years... You cannot just give the exercise. You have to, I think, you have to embody it really deeply. …that is my feeling.

Another participant, Oscar, who teaches both ballet and contemporary, reported that teaching contemporary is less supported than ballet for teaching purposes, due to its undefined nature. He, too, acknowledged the existence of different techniques. Furthermore, he also stated that contemporary has a fluid, ever-changing nature, without any pre-determined subject matter.

> You do not really have set steps. There can be, from different techniques, but.. It is more fluid and changing. So, to compare [ballet] with teaching contemporary. Sometimes, I feel a bit more lost teaching contemporary because I want to teach something new, and you have so many millions of

> possibilities. …you can do whatever. You can roll on the floor, you can climb on the wall, you can do whatever.

The above statement suggests that teaching contemporary techniques poses teaching difficulties. Contemporary does not have a prescribed set of rules, in contrast with ballet which follows specific rules (Torrents, Castañer, Jofre, Morey, & Reverter, 2013). However, it is this endless possibility of seeking inspiration, for example from emotions and concepts (Torrents, Castañer, Jofre, et al., 2013), or from different choreographers and techniques (Fortin, et al., 2002), that enhances the search for new ways of exploring movement (Bremser & Sanders, 2011). On one hand this freedom for exploring a range of movement inspirational possibilities provides the potential for the creation of new movement (Torrents, Castañer, Dinušová, et al., 2013); nevertheless, on the other hand, it can cause instabilities in acquiring pedagogical content knowledge for teaching (Fortin, et al., 2002). It would appear that the lack of rules in contemporary has created pedagogical instability and forced participants to search for teaching solutions. Three solutions could be identified within the data: developing kinaesthetic understanding, acquiring principles of teaching, and gaining knowledge from other fields.

Developing kinaesthetic understanding

In the absence of rules to teach contemporary, Hilda reported the need to improve her kinaesthetic understanding; for example, about the body and its functions.

> Because a lot of contemporary techniques are not standardized as ballet. … Contemporary is… …more a morphosis, more hybrid, people mix techniques a lot. …there is so many things that you have to master. There are so many different kinds of ways where your centre of gravity, and all of that changes. …you need a very good underpinning of understanding the body and its function.

The excerpt above suggests that the non-standardised nature of contemporary allows for different combinations of different techniques; however, for an effective combination of techniques a thorough understanding of the body and its functions is required. Fortin and colleagues (2002) examined how methods of somatic education influenced contemporary dance teaching. Fortin and colleagues (2002) argued that somatic techniques can be taught from a first person view point or from a third

person view point. The third person view point is more common in professional dance schools to achieve specific movement goals; whereas the first person viewpoint is oriented towards individuals and the development of their personal movement awareness (Fortin, et al., 2002).

Fortin and colleagues (2002) contended that experiences from a first person view point were more beneficial for individual learning than experiences from a third person because in the former the body is perceived directly. For instance, an important difference between first and third person view point is that third person view point utilizes demonstration during dance classes (Fortin, et al., 2002), while in the first person view, demonstration is avoided to allow for the individual's sensitive exploration (Feldenkrais, 1972). Utilising the Feldenkrais method®, they provided empirical evidence and showed that a first person view point can facilitate the individual's movement self-discovery and the enhancement of body awareness. Furthermore, they argued that the movement experience is validated by creating a real interaction between the self and the environment, so that the individual can learn from experiencing his or her own actions (Fortin, et al., 2002). This suggests that dance teachers' exploration of teaching tasks from a first person view point is beneficial for developing a kinaesthetic understanding because this approach facilitates the investigation of both individual and environmental information that otherwise would not be perceived. Fortin and colleagues' (2002) study proposes that the exploration of the first person view point approach is beneficial for teachers because teachers and students can mutually construct the conditions in which knowledge is created and acquired.

It is acknowledged that Fortin and colleagues' (2002) study happened in the professional dance setting, not in the higher education setting, because they wanted to avoid potential spectators and the university's demanding agenda. However, their study appears to have significant implications for the practice and development of dance teachers in higher education because it has been acknowledged that the field of somatic education is divided into two different teaching approaches: some somatic teachers have an emphasis on the basic ideologies that created the method, while others have an emphasis on the techniques from specific somatic methods (Dragon, 2015). This division is similar to divisions in teaching approaches in higher education. Dance teachers from the USA's higher education, for instance, appear to

have adopted a practice division in which teachers aiming at dance education adopted a teaching approach focused on the student, whereas teachers aiming at dance performance adopted a teaching approach focused on the teacher (Dragon, 2015). The implications are that those who have a focus on somatic principles, from a first person view point, have a consequent focus on the student and generate learning cultures that facilitate enquiry and organisation of experiences according to individuals' unique ways of perceiving the environment. In contrast, those who focus on techniques, from a third person view point, and on dance performance, generate learning cultures that restrain individuality because this approach relies on repetition, replication, and on obedience to the teacher during teaching and learning events (Dragon, 2015). This emphasises the importance of dance teachers having a kinaesthetic understanding of the individual's body from a first person perspective as well as of having awareness of the specifics of the environment where the individual's body is immersed. Fortin and colleagues' (2002) proposal seems to support Hilda's report, stressing that "you need a very good underpinning of understanding the body and its function" in order to teach because "There are so many different kinds of ways where your centre of gravity, and all of that changes". Further to a thorough understanding of the body and its functions, Hilda also reported that an assembly of principles for practice is required in order to teach contemporary.

Teaching principles

Participants reported that in order to teach contemporary dance, further to having knowledge of techniques, it is necessary to have knowledge of pedagogical principles to implement during practice. Hilda, for instance, reported that some techniques represent a way of moving, rather than typifying a fixed technique. Furthermore, she added that it is the responsibility of the teacher to understand the technique's principles and to create a class structure to guide practice.

> …when you have this release technique, it is a way of moving, it is not a set technique. …you, then, have to know how you are going to structure and build. …you need an architecture of principles and practice, as opposed to knowing the technique. So, the principles and practice need to kind of guide how you structure the class and how you work it out.

The above excerpt points to the need for pedagogical principles to guide contemporary teaching practice. To this extent, previous research has suggested that in order to enhance learners' skill acquisition and concurrently "promote self-esteem, self-efficacy, and positive self-image", practical teaching strategies can be implemented by teachers (Mainwaring & Krasnow, 2010, p. 14). Mainwaring and Krasnow's (2010) pedagogical proposition is based on a number of theoretical foundations and it is accompanied by strategies for practical implementation. This is aligned with Hilda's view that theoretical knowledge of pedagogical principles should guide teaching practice (e.g., "So, the principles and practice need to kind of guide how you structure the class and how you work it out"). For the above reason, Mainwaring & Krasnow's (2010) pedagogical proposal certainly brings value to dance pedagogy; however, from an ecological dynamics and constraints perspective it is additionally important to focus on the interaction between the learner and the environment. Within this perspective, learning is resultant from dynamic exchanges in complex environments, and it is from these exchanges that the acquisition of knowledge occurs (Barab & Kirshner, 2001).

Chow and colleagues (2011) showed how learning design can be shaped by the ecological dynamics and constraints-led theoretical framework. Under this framework, the information for learning arises from the interaction between the individual and the environment (Araújo, et al., 2006). Individuals are considered as complex systems that utilize information in order to self-organize under the influence of constraints (Davids, et al., 2008). From this viewpoint, features of the individual-environment system, such as the physical aspects of the environment, rules of the task, and the biomechanics and morphology of individuals, are considered to constrain learning. As a consequence, the emergence of learning is dependent on particular constraints that individuals meet in specific contexts (Kelso, 2008). Therefore, within the constraints-led approach, a critical task for teachers is to understand how to manipulate key constraints in order to guide the learner's exploration and detection of purposeful movement solutions (Chow, et al., 2011).

According to Chow and colleagues (2011) the strategy of manipulating key environmental, task, and individual constraints facilitates processes of self-organization so that the individual is able to search and explore creative and functional solutions in achieving task goals. The interaction between specific

individual and environmental constraints enables functional movement behaviours to emerge in a way that no single component has authority as to how movements should be performed (Chow et al., 2009). A consequence of this view is that individuals should not aim for an ideal movement pattern in the course of training and practice (Chow, et al., 2007). This perspective is aligned with Hilda's report emphasising the importance of acquiring pedagogical principles for teaching practice, rather than having an emphasis on technique while teaching movement "(e.g., you need an architecture of principles and practice, as opposed to knowing the technique"). From a constraints-led approach, during task exploration individuals recognize distinctive coordination solutions and learning occurs (Davids, et al., 2008). Concepts including the manipulation of key constraints and the avoidance of searching for optimal solutions are framed within nonlinear pedagogy ideas and are expressive of the influence of interactive constraints in facilitating individuals' behaviour changes in learning settings. They justify the need for educators to understand the usability of constraints manipulation in harnessing individuals' self-organizing processes during learning experiences (Chow, et al., 2011).

Outsourcing knowledge from other fields

Participants reported sourcing knowledge from other fields in order to have a better pedagogical fit with contemporary teaching. Hilda, for example, suggested that dance teachers need to understand and acquire knowledge from several areas outside dance in order to be able to adapt to on-going changes affecting dance teachers' pedagogical practice.

> …teachers need to understand, and underpin… …these principles of movement… At least, basic anatomy and… …somatics… …how to use breathing, how to use relaxation… …Feldenkrais, Pilates… …knowledge we have got from sport… …from therapies… …looking inside the body, and how does the individual body work… …that is what I mean about adapting to change, because there is lots of fantastic things that are happening in psychology, in science…

Hilda's elaboration on those "principles and practice", cited above, proposes that a teacher needs to understand and constantly reinforce knowledge for teaching from a range of topics. She identified topics such as "anatomy" and somatic techniques such as "Feldenkrais" and "Pilates". Furthermore, she mentioned that in

order to have an evolving teaching practice, knowledge from other fields such as sport, psychology, and science would also be beneficial. Sourcing knowledge from other fields seems to have become a common practice in dance. Examples where dance has sourced knowledge from other fields include: sport (Chua, 2013; Nordin-Bates, 2012; Walker, Nordin-Bates, & Redding, 2010), psychology (Mainwaring & Krasnow, 2010; Moyle, 2012; Murphy, Nordin, & Cumming, 2008), motor learning (Enghauser, 2003; Kimmerle & Côté-Laurence, 2003; Skrinar, 1986), skill acquisition (Bailey & Pickard, 2010; Vintere, Hemmes, Brown, & Poulson, 2004), pedagogy (Connell, 2009; Warburton, 2008; Wilson, 2009), physiology (Angioi, Metsios, Twitchett, Koutedakis, & Wyon, 2009; Twitchett, Koutedakis, & Wyon, 2009), education (Bonbright, 1999; Bradley, 2001; Gilbert, 2005), and complex systems (Batson, 2008; Hopper, 2012).

The value of sourcing knowledge from other fields lies in exploring topics that might be better developed in other fields; however, they might also be applied in dance. These topics might involve similarities, dissimilarities, and novelty. For example, Nordin-Bates (2012) investigated performance psychology in the performing arts and discussed how the fields of dance, sport, music, and acting could benefit from mutual knowledge exchanges. The findings were grouped under three main sections: convergence, divergence, and novelty. A finding from the convergence section was the importance of understanding environmental and cultural factors across all four fields (Nordin-Bates, 2012). Within the divergence section it was found that a focus on the individual, particularly, through the increment of strength and psychological skills training would facilitate self-regulation (Nordin-Bates, 2012). Finally, the novelty section highlighted the potential of focusing on relationships between artistic features and psychological dependents, such as creativity, inspiration, memorization, emotions, and audiences (Nordin-Bates, 2012). Overall, it was suggested that research integrating the fields of dance, sport, acting, and music holds considerable potential for knowledge development. The potential for pedagogical development from understanding and acquiring knowledge from other fields has also been highlighted by Hilda. She reported that understanding and acquiring knowledge from a range of topics and fields facilitated her reflection on different approaches to teaching.

> …it was a way to think. How can I teach better, and how can I think about other approaches…

The above excerpt suggests that, for Hilda, being exposed to other fields such as sport, psychology, and science, facilitated a better pedagogical understanding of her teaching practice than single exposure within the dance field. Additionally, being exposed to the abovementioned fields enabled the acquisition of further knowledge which she could apply to teaching. Examples of knowledge application, particularly from the fields of sport, psychology, and science, have been identified within the dance literature (see Allard & Starkes, 1991; Brown & Parsons, 2008; Clarkson & Skrinar, 1988; Ingram, 1978; Nordin & McCalister, 2007). However, little research has applied knowledge from a dynamic systems perspective. One exception is the work of Batson (2008) utilising dynamical systems theory to teach body alignment. Batson (2008) utilized dynamical systems theory in order to demonstrate that movement is self-regulated, nonlinear, and emergent from the interaction between the individual and the environment. From this perspective, environmental constraints, such as teaching strategies and cultural aesthetics, interacting with individual constraints, such as neuromuscular and psychological determinants, facilitate the emergence of movement (Batson, 2008). This interaction of constraints within a specific setting, provides boundaries for the emergence of individual goal-directed behaviour as individuals try to self-organise in relation to the unique constraints imposed on them (Batson, 2008; Davids, Williams, Button, & Court, 2001).

The dynamic interaction of constraints, which characterizes emergency of movement coordination, poses many challenges to dance teaching. For instance, in ballet, during the transactional teaching and learning experience, the teacher is mainly concerned with achieving technical perfection (Jackson, 2005; Morris, 2003). Green (1999) stated that traditional teaching, particularly with the aid of mirrors, obliges students to achieve a particular movement aesthetics by means of executing accurate dance technique. Often, within traditional dance teaching, the dance teacher stands in front of students while all, teacher and students, face the mirror. The pedagogical approach of the dance teacher usually focuses on giving specific corrections relevant to body placement, efficient performance of movement, and execution of optimal technique (Green, 1999). However, it has been argued that the

existence of an optimal movement pattern which all individuals should aim for, might not be possible to achieve (Brisson & Alain, 1996). Brisson and Alain (1996), investigated the motor behaviour of 14 university students, seven male and seven female, between 17 and 30 years of age, during the performance of an optimal kinematic movement pattern, based on the performance of the best individual. The optimal kinematic movement was imposed on all participants as the movement-goal to achieve. The findings revealed that no participant could achieve the goal of performing the optimal kinematic movement pattern imposed on them (Brisson & Alain, 1996), which suggests that a teaching focus on achieving optimal movement is inadequate for learning. To this extent, Bartlett and colleagues (2007) argued that not even elite athletes practising over many years are able to reproduce optimal movement patterns; and, in contrast with achieving an optimal pattern of movement, they argued that a focus on movement variability can have a positive impact on the development of movement control and coordination during practice and skill learning.

The ecological dynamics with its associated constraints-led approach, emphasises the role of variability in helping learners adapt to the distinct constraints imposed on them over time (Davids, Glazier, et al., 2003). Variability, in the form of noise, might have a progressive role in not allowing the individual to become too stable in environmentally complex settings. A certain degree of instability facilitates the emergence of exploratory behaviour aiming the search for functional movement solutions (Davids, Glazier, et al., 2003). From this perspective, movement variability has the potential to be functional in stabilizing environmental adaptations, reducing the risk of injuries, and in facilitating changes in coordination patterns (Bartlett, et al., 2007). Together, the research discussed above from Nordin-Bates (2012), Brisson and Alain (1996), and Davids and colleagues (2003), supports the developmental view that sourcing knowledge from other fields such as sport, psychology, music, and acting can promote superior development rather than single exposure to the dance field. This is in line with Hilda's report describing the positive influence of being exposed to other fields (e.g., "sport", "therapies", "psychology") for her pedagogical development.

Rules' Summary

Participants outlined how ballet and contemporary rules acted as task constraints shaping the acquisition of pedagogical expertise. Ballet rules were formal, structured and suffered little development over time (Grant, 2012; Kassing, 2007). The claim there was little variation in ballet over time, and that made ballet easier to teach in contrast with contemporary, was consistent between all participants. Contemporary dance, due to its constant developmental nature, coupled with unspecific subject matter (Bremser & Sanders, 2011), made teaching more difficult due to its variation in movement aesthetics. However, it would appear that it was this difficulty in addressing variation of movement aesthetics that facilitated a superior pedagogical development. Contemporary movement aesthetics could be generated from any type of movement; therefore, participants explored multiple types of movement within teaching, such as different contemporary techniques.

Rules were perceived predominantly from the participants' relationship with their previous ballet teachers (Fortin & Siedentop, 1995; Kimmerle & Côté-Laurence, 2003). This relationship appeared to have constrained feelings of becoming a teacher and competence, as could be observed in the accounts of Alexis and Veronica, respectively. In both these cases, variability of practice associated with teaching was key to overcoming task constraints created by ballet rules. Variability of practice facilitated Alexis's perception about becoming a teacher, and provided Veronica with pedagogical tools in order to address students' learning. Ballet rules were also reported in association with the perception of the movement aesthetic ideal to be reached, in this case by participants' previous teachers. Participants learned ballet from previous teachers, utilising modelling as a teaching strategy in order to demonstrate the movement aesthetic ideal to be achieved.

University students, as reported by Veronica, believe that it is possible to achieve the movement aesthetic ideal. Nevertheless, Veronica mentioned that from her own experience that ideal is very difficult to be reached; the large majority of students are not capable of that achievement. Furthermore, Veronica reported that there are many successful professional dancers in industry that have not reached that ideal. In order to address these teaching task constraints caused by the perception that students can achieve the movement aesthetics ideal, participants try, instead, to explore movement variability. This movement variability aims to facilitate

development of a range of performance skills in order for university students to be better prepared to meet industry demands. If university students are capable of meeting industry demands, they will be in a better position to find jobs in industry, thereby providing a variety of learning situations in which students can explore and develop each individual's potential, which is a common goal for all participants. To this extent, three strategies could be identified within participants' pedagogical behaviour developing: kinaesthetic understanding, teaching principles, and sourcing knowledge from other fields.

5.3 INDIVIDUAL CONSTRAINTS

Individual constraints, as previously explained, are personal, physical, and cognitive characteristics that influence behaviour during processes of learning and control of action (Newell, 1986). Analysis of participants' data revealed that a factor influencing the acquisition of pedagogical expertise was the need for pedagogical knowledge. From a constraints-led perspective, individual needs can be categorised as individual constraints because they relate to an individual's motivation, intentions, goals and consequent behaviour to achieve those goals (Araújo, Davids, Chow, et al., 2009). Data analysis revealed that the need for pedagogical knowledge was the originator of mentoring relationships and participants reported two different modes of engaging in mentoring processes: first, the traditional mentoring process, which is characterised by mentor and protégé coexisting in a mutual relationship; and, second a non-traditional process of mentoring was reported, as self-mentoring processes occurred in the absence of a mentor. Participants' need for pedagogical knowledge is presented and discussed as an individual constraint in what follows.

5.3.1 The need for pedagogical knowledge

The analysis of Veronica's account exposed the need for pedagogical knowledge as an important individual constraint because it influenced her effective functioning in the acquisition of pedagogical expertise. Aligned with the constraints-led approach (Newell, 1986), the need for pedagogical knowledge was classified as an individual constraint because it was reported by Veronica as being a personal need. The conception of needs was initially utilised in psychology incorporated in the study of motivation with several theories being proposed. A theory was suggested by Hull (1943) and referred to the understanding of individual behaviour by connecting

it to individuals' physiological needs and their relevant environmental conditions. A group of innate physiological needs, such as the need for food, sex, and water, would generate drive states (i.e., a drive state is an organism's innate, biological impulse to achieve a goal or satisfy a need) forcing the individual into action (Hull, 1943). Hull's theory suggested that behavioural achievement was dependent on motivation and intention as well as on ability and behavioural control, and his theory supported constructs related to how learning occurs (Ajzen, 1991). However, a limitation of Hull's (1943) theory was that it did not explain the occurrence of spontaneous behaviours in association with cognitive processes, such as exploration, investigation, and curiosity (Deci & Ryan, 2000).

A different theory, proposed by Murray (1938), suggested that needs are not innate, they are acquired and derive from psychological, rather than from physiological processes; his definition of needs can be read below:

> A need is a construct (a convenient fiction or hypothetical concept) that stands for a force (the physico-chemical nature of which is unknown) in the brain region, a force that organizes perception, apperception, intellection, conation and action in such a way as to transform in a certain direction an existing, unsatisfying situation. (pp. 123-124)

However, this theory has been criticised for having a very broad definition which could include other terms, such as "motive, desire, or goal" (Deci & Ryan, 2000, p. 228).

Further work has proposed that needs could be hierarchically organised in five levels, from basic or deficiency needs, such as: (1) physiological (e.g., food, sleep), (2) safety (e.g., physical and cognitive security), (3) social (e.g., love, friendship), and (4) esteem (e.g., status, prestige), to growth needs, such as (5) self-actualisation (e.g., achieving personal potential and self-fulfilment) (Maslow, 1943, 1954). However, a limitation of this theory is that anecdotal examples suggest that individuals may not necessarily start by fulfilling basic needs before fulfilling hierarchically superior needs. For example, fulfilling hunger needs is a physiological need; therefore, according to Maslow (1943, 1954), this need is to be fulfilled before higher needs within his hierarchy. However, an individual may decide to go on a hunger strike to fulfil self-actualisation needs, such as seeking personal growth or peak experiences; this example refutes Maslow's theory of hierarchy of needs.

Additionally, Maslow's theory is limited in explaining the interplay of needs in specific environments; for example, some tribal groups in Ethiopia face great uncertainty in the quest for food, so they utilise magic and spiritual practices, seeking spiritual peak experiences, to help them cope with the anxiety caused by the satisfaction, or not, of hunger (Shack, 1971). However, according to Maslow (1943, 1954), this should not occur because food is a basic physiological need and seeking spiritual peak experiences is a form of self-actualisation; therefore, individuals who cannot achieve basic physiological needs are not capable of fulfilling self-actualisation needs. Furthermore, other limitations of Maslow's theory are that it lacks an empirical approach and only focuses on the energisers of motivated action, not on how behaviour is directed (Gagné & Deci, 2005).

Finally, Deci and Ryan (2000), addressed human needs in relation to Self-Determination Theory, which focuses on the understanding and explanation of intrinsic psychological processes that stimulate optimum health and functioning. Self-determination theory investigates individuals' intrinsic developmental tendencies and inherent psychological needs, which generate the foundation for self-motivation and the integration of personality (Ryan & Deci, 2000). It was argued that to understand goal-directed-behaviour and psychological development, the needs that support goal achievement and that direct which regulatory processes guide individuals' goal pursuit, need to be addressed (Deci & Ryan, 2000). Hence, three innate psychological needs (e.g., for competence, relatedness, and autonomy) were presented as important for "understanding the *what* (i.e., content) and *why* (i.e., process) of goal pursuits" (Deci & Ryan, 2000, p. 228). Competence was described as an individual tendency to have an influence on the environment and to achieve important results within it; relatedness was described in reference to the desire to feel connected to other individuals (i.e., to reciprocate love and care); and autonomy was described in reference to volition (i.e., the individual's desire to self-organise experience and behaviour and to act in harmony with her or his integrated sense of self) (Deci & Ryan, 2000).

While trying to fulfil the need for pedagogical knowledge, Veronica became aware that experienced dance teachers were associated with comprehensive pedagogical knowledge; thus, she searched for several individuals and established mentoring relationships, as can be observed below.

> I have got a few mentors, different people for different reasons. …some people are mentors not because they have taught me necessarily, but because of their experience in teaching dance: their scope of knowledge and understanding. So, it is more a quest. It is a mentor that I go to. … I need some advice about this…

Lockwood and colleagues (2007) stated that the protégés' goals of mentoring relationships are usually aligned with the expertise that mentors need to possess. This appears to be in line with Veronica's rationale above for establishing mentoring relationships because it would appear that it was her need for specific pedagogical knowledge that guided the search for specific teachers, with whom she established mentoring relationships. Therefore, the excerpt above suggests that the rationale supporting Veronica's search for several mentors was to acquire pedagogical knowledge concerning specific issues (e.g., "I need advice about this"), associated with each one's valid ways of teaching those issues (e.g., "because of their experience in teaching dance"). Previous research on pedagogical expertise has acknowledged that the process of becoming an effective teacher involves acquiring pedagogical knowledge and pedagogical content knowledge (Shulman, 1986; Shulman & Shulman, 2004). Veronica's account appears to be aligned with this research (Shulman, 1986; Shulman & Shulman, 2004) because the data suggests that she, too, was aware of her need for pedagogical knowledge to become an effective teacher.

From an ecological perspective Veronica's data appears to be aligned with acquiring *knowledge about* and *of* (Gibson, 1986) pedagogical issues and action because there seems to be a connection between receiving advice about specific issues (i.e., perception of specific informational constraints) and teaching those specific issues (i.e., exhibiting functional behaviour influenced by those informational constraints). This idea is supported by further data that suggests that the establishment of mentoring relationships appears to be guided by the possibility of obtaining specific information from perceiving mentors in action; however, the perception of those events appeared to be related to Veronica's teaching practice, as can be observed from the excerpt below.

> There are other people that I go… …when I'm thinking about certain things… …one particular lady. It is about her boundless energy and passion

> for it. …For teaching dance. So, different kinds of things float, resonate with me, from different people.

The excerpt above suggests that Veronica's interaction with mentors was selective and purposeful (Tellez, 1992) and was linked with her teaching practice, which is probably why she reported seeking "one particular lady" when she was "thinking about certain things" concerning "teaching dance". Veronica must have interacted directly with the "particular lady" during teaching events to be able to perceive specific information concerning "boundless energy and passion" for "teaching dance" because, as has suggested by Barsalou (1999), the perception of physical as well as perceptual content (e.g., "boundless energy and passion") requires direct social interaction. This suggests that the type of knowledge that Veronica acquired was both *knowledge about* and *of* pedagogical issues. In reference to *knowledge about*, Veronica received advice from mentors (e.g., I need some advice about this); and, in reference to *knowledge of,* it was Veronica's interaction with her mentors' teaching events that facilitated the acquisition of knowledge related to her own practice. From engaging in practice, Veronica was able to acquire *knowledge of* because this type of knowledge includes relevant information beneficial to control of action and related to an individual's action capabilities (Gibson, 1986), which is illustrated by her report concerning "thinking about certain things … for teaching dance".

Veronica reported having initiated other informal mentoring relationships with female mentors; however, it was not clear from analysing Veronica's data what the rationale behind this preference was. It could have been because Veronica's mentoring opportunities mainly involved contacts from within the same gender group, or because role modelling and social roles, such as sexual concerns and restriction of identification (Ragins & McFarlin, 1990), might have influenced her mentoring choices. The mentor's literature describes mentoring relationship within the same gender has being marked by mechanisms of interpersonal comfort (Allen, Day, & Lentz, 2005) and suggests that they usually happen due to shared experiences (Allen, et al., 2005) as well as shared social identities (Ragins & McFarlin, 1990). Ragin and McFarlin (1990) stated that same gender mentoring interaction is more likely to occur in relation to social activities and when the mentor serves a role modelling function. Understanding the choice in determining mentors is important

because it might influence subsequent relational processes (Allen, Eby, & Lentz, 2006); for instance, in general, personal relationships are determined by liking and perceived similarities because it is these perceptions that determine partner attraction and relationship initiation (Graziano & Musser, 1982).

To this extent, data analysis exposed that Veronica's relationship initiation tended to be with female mentors, which were characterised by having "experience", "knowledge", "understanding", "energy", and "passion". These characteristics that mentors needed to have suggested that, most probably, Veronica's relationship was guided by the attainment of two conditions. First, her reports in relation to "knowledge" and "experience" suggest that she tried to fulfil her need of acquiring knowledge for teaching from experienced mentors. Second, reports relating to "understanding", "energy", and "passion" suggest that she searched for those mentors that could additionally serve a role modelling function, in terms of career development (Ragins & McFarlin, 1990), as well as psychosocial roles, in terms of nurturance and social support (Kram, 1985). Ragins and McFarlin (1990) stated that role modelling appears to be a critical function of the mentoring relationship for female protégés because the observations of female mentors may facilitate learning about coping with potential conflict between work and family, and gender-related obstacles for development. Veronica's case suggests that individual constraints, such as the need for pedagogical knowledge, influenced goal-directed actions involving searching for specific mentors in order to acquire specific knowledge (Lockwood, et al., 2007)

Within ecological psychology, an important feature influencing behaviour is goal-setting because goals influence control of action (Riccio & Stoffregen, 1988). Riccio and Stofreguen (1988) argued that goals impose important constraints on behaviour because they set the criteria for evaluating the interaction between the individual and the environment; furthermore, they showed that individuals adopt particular behaviours because those behaviours are key to goal achievement. Self-determination theory has also addressed the concept of goal-directed behaviour, separating the outcomes of goals, and "the regulatory processes through which the outcomes are pursued, making predictions for different contents and for different processes" (Deci & Ryan, 2000, p. 227). A vital issue in goal achievement refers to the extent to which individuals are capable of satiating their psychological needs for

competence, relatedness, and autonomy as they try to achieve their goals. From this perspective, goal-directed behaviour needs to be understood in relation to the needs that support goals' psychological relevance, and to the effect that regulatory processes have on directing individuals' goal achievement (Deci & Ryan, 2000). Self-determination theory focuses essentially on motivation of behaviour; therefore, it is limited in explaining its regulation. However, to have a comprehensive understanding of both motivation and regulation of behaviour, maybe self-determination theory could be coupled with ecological dynamics and constraints theory.

To this extent, an explanation of Veronica's behaviour by coupling the constraints-led approach with self-determination theory, would start by categorising her need for pedagogical knowledge as an individual constraint, which within self-determination theory refers to an individual's innate needs for competence, relatedness, and autonomy (Deci & Ryan, 2000). In Veronica's account, competence could be concerned with her desire to become an effective teacher; relatedness could be related to caring and being cared for by specific mentors; and, autonomy could perhaps be concerned with the self-organisation of her teaching behaviour in relation to her sense of self. According to self-determination theory, Veronica's need for pedagogical knowledge would lead to her desire for obtaining pedagogical knowledge. To obtain this knowledge she would set goals, which were reported in reference to her acquisition of specific knowledge from specific individuals (e.g., "I need some advice about this… …different kinds of things float, resonate with me, from different people").

From an ecological perspective, goals of behaviour influence control of action because they determine the affordances of control strategies for perception and action (Riccio & Stoffregen, 1988), which are expressed through an individual's adaptive behaviour (Araújo, et al., 2004). Therefore, an individual's adaptive behaviour can be understood as emergent from the interaction of individual and environmental constraints conditioned by particular goals (Araújo, et al., 2004). As a consequence, Veronica's goal-oriented behaviour would be to seek and engage in relationships with mentors (i.e., environmental constraints), and to seek specifying pedagogical information (i.e., affordances) useful to control pedagogical action related to her action capabilities.

Finally, self-determination theory would explain that the satisfaction of Veronica's needs would be intrinsically motivated because she freely chose to be engaged in the mentoring processes. Intrinsic motivation refers to an individual's free choice in participating in interesting activities without external influences, such as pressure, instructions, rewards or consequences (Deci, 1971); and are based on an individual's needs to feel competent and self-determined (Deci, 1975). Veronica's account exemplifies how the theory of constraints and self-determination theory could be used to understand an individual's intrinsic motivated behaviour, imposed by the interaction between individual constraints (i.e., the satisfaction of her need for pedagogical knowledge) and environmental constraints (i.e., mentors) in order to satisfy her needs of becoming pedagogically effective and self-determined through the development of goal-oriented activities.

5.3.2 The need for pedagogical knowledge and self-mentoring

Further to proactively searching for mentors, such as in Veronica's account above, the analysis of data exposed a different way of fulfilling the need for pedagogical knowledge. To this extent, another participant, Oscar, reported to have engaged in self-mentoring processes (Darling, 1986). Oscar's first interaction with a mentor occurred with an experienced, knowledgeable, and internationally well-respected individual, during a period of two years, while he was completing his teaching degree in Spain. This mentoring interaction occurred *naturally* (Mullen, 2007) and it was *informal* (Eby, et al., 2007; Galbraith, 2003) due to contextual circumstances.

First, there was a physical proximity between Oscar and his teacher during Oscar's attendance at his teaching degree classes at university; it was this physical proximity and educational interaction that led to the establishment of a mentoring relationship. Second, Oscar had a need for acquiring teaching skills and pedagogical knowledge in order to become an effective teacher. The combination of these two factors naturally created the conditions for Oscar to become a protégé. At that point in time, Oscar's teaching degree was concurrent with his work as a performer in a professional dance company; however, with the termination of his performance contract, Oscar returned to Australia. This change of circumstances caused difficulties in accessing his mentor and, in the absence of a third party providing mentoring, his solution was to turn to himself.

The lack of access to mentorship upon Oscar's return to Australia created a problem for him because he did not have much teaching experience; hence, he needed guidance and support concerning his teaching. Furthermore, it would appear that due to Oscar's personal circumstances he did not have the opportunity to find a mentor in Australia; therefore, his solution to satisfy his need for pedagogical knowledge to support his teaching, was self-mentoring. The excerpt below describes that it was due to his difficulties in interacting with his Spanish mentor that he engaged in self-mentoring processes.

> …only my professor from university. He is my mentor, but he is in Spain. So, I do not have a lot of contact with him. So, I have got to be my own mentor.

Additionally, Oscar explained that this self-mentoring solution might have been prompted by his professional status of being a freelance teacher.

> Maybe that is something of being a freelance teacher. …I have to keep on top of my game. I cannot sort of relax and I have got to be my own mentor.

According to Oscar, freelance teaching is usually a more precarious professional condition than teaching in a university because, to him, opportunities to teach are more rare and uncertain.

> I am a freelance dance teacher. So, you kind of just take what you can get. So, I suppose that is, maybe, not luxury.

Together, the three excerpts above suggest that the lack of teaching opportunities (e.g., "you kind of just take what you can get") coupled with the need to be an effective teacher (e.g., "I have to keep on top of my game") were the reasons influencing Oscar to engage in self-mentoring processes. He emphasised differences between working as a freelance teacher and working as a fulltime teacher in an organization in reference to the different implications that each role may have.

> I feel, maybe, if you are in an institution… …you might have someone in charge. …maybe inspirational to you. To become a freelance teacher that is taken away from you. You do not have that mentor. So, it is just yourself.

Oscar's report, from above, points to the boundaries between working as a freelance or as a fulltime dance teacher and highlights the fact that access to mentors is facilitated for fulltime teachers, which suggests that Oscar may have a personal

conception of how access to mentors is afforded. His rationale concerning engaging in mentoring processes might be that he thinks that access to mentors is naturally afforded in organizations due to their hierarchical levels (e.g., "you might have someone in charge"). However, this might not always be the case; for example, it could be observed in the previous discussion of Veronica's account concerning engaging in mentoring processes, that she was a fulltime teacher in a tertiary organisation; however, mentorship was not offered to her, she actively searched for mentors. Veronica's example refutes Oscar's rationale that mentors are naturally afforded in organisations.

In reference to the preservation of mentoring relationships, it has been argued that the positive impact of a mentor might disperse if the relationship ends because a range of environmental factors may continue to impact on the individual after the end of the relationship (Lockwood, et al., 2007). Although the example from Lockwood and colleagues (2007) referred to the influence of contextual factors such as poverty and drug abuse among peers within youth mentoring, an analogy can be made with regards to Oscar's account because its context referred to protégés "just starting a new field of study" (Lockwood, et al., 2007, p. 235). This context has similarities with Oscar's context because he, too, was initiating a new field of study (e.g., teaching degree) and it was in this context that Oscar's mentoring relationship was initiated and terminated. The analysis of data suggests that the impact of his mentor in fulfilling Oscar's need for pedagogical knowledge might have dispersed with the end of the relationship (e.g., "…only my professor… He is my mentor, but he is in Spain. … So, I have got to be my own mentor."). Due to the absence of his mentor providing pedagogical guidance and support, and because Oscar needed to maintain pedagogical knowledge input in order to become an effective teacher, he turned to processes of self-mentoring.

Self-mentoring implies the idea of someone consciously providing his or her own guidance and direction (Darling, 1986), and it also implies the idea of self-knowing (Bloom, 2007; Carr, 2011). Self-knowing entails the awareness of understanding how one learns (Carr, 2011) and what one's strengths, limitations, needs and values are (Bloom, 2007). The idea of self-mentoring is different from the idea of self-development (London & Smither, 1999) because it implies the ideas of self-guidance and self-knowing, whereas self-development "means seeking and using

feedback, setting development goals, engaging in developmental activities, and tracking progress on one's own" (London & Smither, 1999, p. 3).

In reference to self-mentoring processes, Oscar added that seeking inspiration was *sine qua non* to being a freelance teacher, as can be observed in the following excerpt: "…as a freelance teacher; I have got to be inspirational to myself. So, I have got to be my own mentor…". The above excerpt suggests that "inspiration" was important because it would appear to be correlated with him being an effective freelance teacher. However, it was also reported by Oscar that inspiration may be provided by a third party "you might have someone in charge. …maybe inspirational to you". This suggests that, initially, Oscar may have conceived mentoring as a traditional relationship between two individuals; and, a possible explanation for engaging in self-mentoring processes may be that during his teaching degree in university, "inspiration" to teach was being provided by his former mentor. Because being mentored by a third party ceased to be possible for Oscar due to his return to Australia, he found his own way of being inspired through self-mentoring processes. As previously mentioned, Oscar's status changed from being a prospective teacher to becoming a free-lance dance teacher and, in his perception, freelance dance teaching is done in isolation; therefore, further to his need for pedagogical knowledge, the maintenance of inspiration for dance teaching appears to be another reason for developing self-mentoring processes.

In dance, mentors appear to have an inspirational role and impact upon students (Araújo, et al., 2011). It might be possible that Oscar's pursuit of inspiration ("I have got to be inspirational to myself ") associated with self-mentoring ("I have got to be my own mentor") is indicative of the powerful effect that his mentor ("a respectful, and recognised dance teacher") had on him. Yet, since access to his mentor was difficult, he felt the need to become his own mentor and to inspire himself: "I have got to be my own mentor. …I have got to be inspirational to myself". Oscar's capacity to pursue self-mentorship suggests that he knows himself, because self-knowing seems to be an important condition for self-mentoring (Carr, 2011). Pursuing self-mentoring also suggests that he is aware of what he is required to do in order to become an effective teacher; most probably, it was this self-knowledge that gave him confidence and enabled him to be responsible for his learning (Carr, 2011).

Four aspects emerged from analysing Oscar's account. First, there appeared to be a solid connection between his status of being a freelance teacher and his need to be "on top" of his "game" (i.e., being an effective teacher). This connection might direct Oscar to be aware of what he needs to do in order to be successful at teaching. Second, the expression "keep on top" also appeared to be related to being aware of current trends within the dance industry. This awareness prompted him to use digital media and peer interaction to remain updated in current trends. Third, for Oscar, his status of being a free-lance dance teacher might not allow him to establish a network and to find a local mentor because, according to him, free-lance teaching seems to be mostly done in isolation (e.g., "To become a freelance teacher, that [the opportunity to be mentored] is taken away from you"). Finally, the fourth aspect, an alternative explanation for Oscar not having a mentor, might be because he simply did not search for one. It could have been that Oscar's personal traits limited his search for mentors because he might be the type of individual that prefers to adopt self-guidance and to find solutions to his problems, rather than ask for guidance from third parties. This independence and autonomy during mentoring processes is related to self-directness, which, according to Galbraith (2003), influences individuals in specific ways, as can be observed in the following quotation:

> A true and comprehensive mentoring process (a) promotes the enhancement of self-directedness in learners, (b) fosters transformational change in the way they view the world in which they live, work, and play, and (c) encourages autonomy, creativity and independence (p. 9)

As can be observed in the quotation above, Galbraith (2003) suggests that mentoring promotes self-directedness, changes the way individuals view the world, and encourages autonomy, creativity, and independence. The fact that Oscar chose, and was able to pursue self-mentoring processes autonomously might therefore be indicative of the impact of his previous mentoring relationship on enhancing his self-directedness. As previously mentioned, his mentoring was informal and, in this sense, it has been suggested that informal mentoring functions seem to generate more career outcomes than formal mentoring (Chao, et al., 1992; Ragins & Cotton, 1999). These greater outcomes associated with informal mentoring might happen because informal mentoring is usually unplanned, results from an attraction between mentor and mentee, and is generally a positive qualitative experience for both parties

(Galbraith, 2003). In contrast, formal mentoring might be more predisposed to generate ineffective mentoring because there might be a poor match between mentor and mentee (Parise & Forret, 2008). Furthermore, a poor match might negatively affect the mentor's involvement (Kram & Hall, 1996) possibly resulting in a decrease of mentoring functions for the protégé (Allen, et al., 2006).

As argued by Galbraith (2003), the mentoring process should develop self-directness because a mentoring function in relation to self-directness is visioning stimulating protégés to function as autonomous learners (Galbraith, 2003). To this extent, Oscar developed a range of processes and strategies that assisted him to become independent, without the need for a mentor. For example, Oscar was aware of the need to be an effective teacher, and one process that he developed was to observe peers teaching to compare their practice with his teaching practice.

> Watching different teachers teach… …and seeing if that is all okay with what I am teaching.

Further to observing peers, Oscar would additionally discuss teaching problems with them, as can be observed in the excerpt below.

> I also have a whole network of friends and resources that I can go back to and communicate if I had a teaching problem…

Another process reported by Oscar that would appear to have contributed to his pedagogical independence was to conduct research via the digital media.

> I am not trying to just teach and forget about what is going on in the dance world. I'm always looking at YouTube…

Additionally, he reported reading books to address teaching problems.

> If I am feeling stuck, sometimes, about what class, or steps, or problems I have, I always go back to my books…

Oscar's actions exemplify engagement in processes of peer observation and discussion; investigation of current trends through the internet; and using his own books to obtain knowledge and to become independent concerning his teaching practice. These processes are consensual with previous research in dance pedagogy, which has acknowledged that gathering information from the internet (Posey, 2002) as well as engaging in peer observation (Østern & Øyen, 2014) can contribute to enhancing the quality of teaching. Furthermore, previous research in mentoring has

also acknowledged that an individual's actions of observing others and finding resources, are efficient strategies in self-mentoring (Darling, 1986).

From an ecological psychology perspective, action possibilities are determined by the combined properties of a given environment and of an individual, that mutually interact (Gibson, 1986). To this extent, Gibson (1986) argued that organisms have agency and are capable of perceiving affordances in order to act. As previously explained, affordances were conceived by Gibson as action possibilities; however, what Gibson (1986) did not include in his view of affordances was an explanation about why certain affordances could be utilised, while others would be excluded over time. In this case, Oscar's self-mentoring action illustrate the preference for specific affordances, such as peer observation and discussion, accessing books, and finding resources on the internet. Oscar was qualified as an expert teacher; therefore, it is important to understand his preference for such affordances to understand his acquisition of pedagogical expertise.

Withagen and colleagues (2012) agreed with Gibson that affordances represent potential for action; however, they added that affordances can additionally invite behaviour. Central to this invitational approach to perceiving information, is the relationship between affordances and agency. To this extent, Withagen and colleagues (2012), following Gibson (1986), concurred that invitations certainly entail agency; however, they added that a prerequisite of agency is that the agent needs to actively explore the affordances of her or his specific environment. This implies that an invitation can be accepted or declined because the agent does not necessarily have to accept all affordance invitations (Withagen, et al., 2012). As argued by Withagen and colleagues (2012), when exploring the environment, the agent might be attracted or repelled by specific affordances; the resultant behaviour is a consequence of these acceptances or denials of affordance invitations. Withagen and colleagues' view, which conceptualize affordances as providing opportunities for action, and also inviting behaviours, seems to be purposeful in explaining Oscar's teaching behaviour and actions because his behaviour appears to have had a mutualist perspective between the environment (i.e., peers, books, and internet) and him.

Withagen and colleagues (2012), argued that the likelihood of an affordance inviting an action depends on four factors: the individual's action capability, her or

his personal history, the importance of affordances, and culture. Three of these factors are relevant for explaining Oscar's pedagogical action within the self-mentoring processes. First, is the action ability of the individual: because the relationship between her or his abilities and the properties of the environment define the actions to be performed and which actions are actually invited. To this extent, observation and discussion with "peers" constitutes an affordance for pedagogical action because Oscar reported to "have a whole network of friends" that he could access to address his "teaching problems". Therefore, it can be assumed that the critical environmental property supporting the basis for action is Oscar's relationship with peers based on friendship. In a similar vein, "books" constitute an affordance that attracts behaviour because they determine what actions can be performed; that is, they constitute the basic support for addressing "problems" during teaching. For example, in reference to ballet, Oscar reported to have learned and mastered the Vaganova (1969) method for teaching, as can be observed from the following excerpt.

> I learnt how to teach the Vaganova works syllabus dance… So, if I want to teach the steps, you always go back, and that is how you teach because there is no other way of really performing it.

The above quotation illustrates that the "Vaganova works syllabus dance" is Oscar's only reference to teaching ballet and he reported that there is "no other way of really performing it". In this sense, further to determining what actions can be performed, the "Vaganova works syllabus dance" additionally determines what actions are invited. For instance, subject matter is taught according to specific ages and skill levels, as can be observed in the excerpt below.

> There are eight different levels of classes to learn. … So, I know which steps should be performed by which age group and which level.

The above excerpt exemplifies that what influences Oscar's teaching action is the relationship between his capabilities and the affordances of the Vaganova method because, with reference to teaching, it is the Vaganova method that determines what actions are invited and performed. Second, it would appear that Oscar considers some affordances more important than others (Withagen, et al., 2012). An example of these different levels of importance is Oscar's report with reference to a specific peer concerning a range of teaching problems.

> I always keep talking to the owner of the school about what she does in different situations.

The reference to "the owner of the school" suggests that this peer is more important than others because no other peers were specifically reported by Oscar. Third, Oscar reported that to a certain extent, ballet facilitates a particular type of behaviour in comparison with contemporary. Ballet affordances invite specific behaviours directed by rules, while contemporary affordances invite a different range of behaviours, not necessarily directed by rules, as can be observed below.

> …to teach the Vaganova works syllabus dance and there is a whole specific list for which steps should be performed at which age. I always... …know which steps should be performed by which age group and which level. … If you are teaching ballet! That is the steps to teach. … Contemporary, you do not really have set steps. There can be, from different techniques, but because it is more of a contemporary thing, it is more fluid and changing. … You have so many millions of possibilities.

The excerpt above illustrates differences between teaching ballet and contemporary and suggests that each genre's specific cultural variations promote a particular behavioural responsiveness from Oscar; that is, the teaching culture within ballet is associated with prescribed teaching behaviours while that within contemporary is not. This appears to be aligned with suggestions that culture may be involved in the possibility of an affordance inviting an action because culture "grows in the body, giving rise to a particular responsiveness to certain affordances in the environment" (Withagen, et al., 2012, p. 256).

The three factors described above, (i.e., the individual's action capability, the importance of affordances, and culture) exemplify Oscar's pedagogical action within self-mentoring processes in reference to the idea that affordances can invite behaviour. As discussed above, this idea is supported by the notion of agency, which is fundamental to the ecological approach (Gibson, 1986), and has important implications for understanding pedagogical behaviour. The first implication is that affordances' invitations entail agency; that is, an affordance can invite behaviour; however, only if an individual perceives it (Withagen, et al., 2012). In Oscar's case, an example of an affordance inviting behaviour is his perception of peers. However, perception of peers could be discriminated in positive or negative ways. This

example constitutes the second implication for understanding pedagogical action in relation to agency because it shows that an affordances' invitation can always be declined (Withagen, et al., 2012). For example, Oscar reported to have perceived and identified negative teaching behaviours among peers; in this case these behaviours were declined, as can be observed from the following excerpt.

> …that was an important thing for me as well. Was identifying what other teachers are doing badly and not trying to fall into those same mistakes…

The excerpt above illustrates how agency influences action because in this case, perception of peers illustrates how affordances' invitations could be declined. The behaviour invited in this case was for Oscar to compare his teaching practice with the teaching practice of his peers to judge if his teaching practice was acceptable (e.g., "if that is all okay with what I am teaching"). The comparison of peers' teaching behaviours served the purpose of differentiating and validating Oscar's teaching practice, only the teaching behaviours that were perceived by Oscar as effective were maintained. This differentiation and validation of teaching behaviours of peers attest the role of peers as affordances supporting the development of Oscar's pedagogical expertise.

The need for pedagogical knowledge's summary

Veronica and Oscar's accounts indicate the influence of individual constraints (i.e., the need for knowledge and self-mentoring, respectively) influencing mentoring processes; however, even if both actively initiated mentoring processes, the data revealed that these processes happened in different ways. Veronica, in contrast with Oscar, seems to be successful in finding mentors, locally or not. It might be that Veronica had easier access to mentors because universities usually afford multiple opportunities for interaction and networking (Healey, 2000), and Veronica is a full-time lecturer in a university. Yet, another possible explanation for the differences between finding mentors might be because Veronica searched for mentors and Oscar did not. Nevertheless, independently of the rationale supporting Oscar and Veronica's behaviours, their cases illuminate the need for pedagogical knowledge, as an individual constraint, to facilitate different ways of establishing mentoring processes during their pedagogical development. A common factor for both was that these individuals perceived and pursued mentorship processes because they felt that they were beneficial for their pedagogical development. Veronica's account was

explored in relation to the literature of mentors, whereas Oscar's account was explored in relation to the literature of self-mentoring (Darling, 1986; Galbraith, 2003) and affordances (Gibson, 1986; Withagen, et al., 2012).

Chapter 6: Conclusion

The current PhD program focused on the complexities of the acquisition of pedagogical expertise in dance teaching from utilising a qualitative research methods approach. A few characteristics of qualitative research are the focus on real world experiences of individuals, the generation of rich descriptions, and their suitability for conducting educational research (Patton, 2001). In this research study, developmental experiences of dance teachers concerning the acquisition of pedagogical expertise were explored through the constraints-led approach which has previously been utilised in sport (Davids, et al., 2008) and in dance (Torrents, Castañer, Dinušová, et al., 2013; Torrents, Ric, et al., 2015). In pursuing the three research questions, both the utilisation of the constraints-led and of the qualitative approach enabled the identification of five ecological constraints that influence dance teachers' acquisition of pedagogical expertise. These ecological constraints were divided into three categories in accordance with the framework: environmental (e.g., mentors, role models, and students); task (e.g., rules); and individual (e.g., needs).

6.1 ENVIRONMENTAL CONSTRAINTS

6.1.1 Mentors

Mentors were observed to provide guidance to participants and participants' interactions with mentors appeared to be mainly prompted by environmental constraints (Newell, 1986) such as: availability of more experienced individuals from the fields of dance and education; and dance peers. Some participants described that learning how to teach was not an initial central goal. In these cases, it was by being performers in dance companies that engaged them in mentoring relationships. From this involvement with mentors with a focus on pedagogy, a shift in individuals' goals occurred regarding their desire to become dance teachers. Participants learned how to teach by being immersed in specific environments under the influence of their respective mentors, and they then realised that they could become effective teachers.

The mentors' role, therefore, appeared to be one where they exposed participants to significant teaching and learning experiences, and by doing so, contributed to participants becoming expert dance teachers. Engagement in

mentoring relationships facilitated participants' acquisition of pedagogical knowledge concerning specific teaching strategies, class structuring, and pedagogical approaches to teaching and learning. Furthermore, all mentoring relationships were observed to be informal, and not instigated by a third party (Chao, et al., 1992; Eby, et al., 2007).

6.1.2 Role models

Role models were teachers and master teachers who interacted with the participants throughout their life, from childhood until adulthood. Participants described all role models as being equally important to pedagogical development. Earlier childhood experiences were connected with passion, creativity, ethical, and professional values, through to fun activities. Adulthood experiences facilitated participants' acquisition of *knowledge of and about* (Gibson, 1966) class structuring, pedagogical approaches, and subject matter exploration. Participants identified "good" and "bad" role models, where both "good" and "bad" role models instigated their learning and contributed to their acquisition of pedagogical expertise. "Good" examples acted as attractors, facilitating participants' regulation of effective pedagogical behaviour, and "bad" examples acted as repellers, being kept in mind so as to avoid replication (Lockwood, et al., 2002).

Master teachers, from their passionate behaviour and ability to implement enjoyable dance classes, were perceived as distinct from teachers, and viewed as inspirational. Their behaviour was perceived as a complementary relationship between professional teaching and private life. They were perceived as key innovators and reliable sources of knowledge within the dance context. In general, teachers and master teachers contributed to the improvement of teaching efficiency by providing: (1) inspiration for teaching; (2) psychosocial support; (3) pedagogical information; and (4) opportunities for exploration of teaching tasks.

6.1.3 Students

Students facilitated participants' exploration of pedagogic task variability while immersed in a range of environments. Their exposure to a variety of students and their respective environments facilitated the development of a range of teaching strategies that allowed participants to prepare for, and address, unexpected events during teaching (Berliner, 2004). Preferences for teaching learners, children or

adults, were observed. Each preference was described as being intrinsically different, due to the dissimilar learning and interactional features that characterise each learner's maturation level. Learners' maturation levels affected the quality of interaction between each participant and each group of learners (i.e., children or adults), and influenced participants' behaviour in specific ways. Therefore, a different developmental pedagogical value was associated with teaching children in contrast to teaching adults.

Participants' preferences for teaching adults were twofold: (1) they were perceived as being more communicative; (2) they were perceived as enabling an equal basis for interactive behaviour. It was argued by participants that both efficient communication and interaction are important in dance because they facilitate creative exploration. Furthermore, interaction also appeared to be important when it was enjoyable, because enjoyable teaching events seemed to be more conducive to better learning and creative development. Participants' preference for teaching children was due to the feeling that teaching children required the application of a wider range of teaching strategies to prepare for and address any unexpected events during teaching.

University students specifically shaped participants' pedagogical behaviour. Participants developed self-awareness skills, perception and action abilities (Gibson, 1986; Warren, 2006) in order to address higher education requirements, as well as dance industry trends. Perception and action abilities served to assess students' levels of maturity in order to enhance teaching and learning processes, while meeting dance industry needs. The enhancement of participants' skills and abilities included the employment of verbal and non-verbal strategies. Student feedback was identified by participants as being a specific constraint within higher education. It contributed to shaping pedagogical behaviour because it facilitated awareness about participants' teaching practice. Furthermore, it promoted pedagogical development by facilitating the exploration of several teaching strategies and subject matter.

Students, as an environmental constraint, showed that the individual and the environment are codetermined (Barab & Plucker, 2002); that is, participants learned from students and students learned from participants. Participants experienced teaching a range of students from diverse backgrounds and ages and, in general, it appears that it was by teaching a range of students and implementing diverse teaching strategies, that participants were able to develop adaptive behaviours.

Teaching a variety of students and exploring several teaching strategies facilitated the development of pedagogic behaviours which developed participants' pedagogical effectiveness, even in unexpected teaching situations. Variability, provided by the range of students in several teaching environments, appears to have facilitated participants' pedagogical behaviour in relation to self-awareness, self-regulation and adaptability, this is in line with the literature that argued that individuals' adaptive variability is exclusive to experts (Davids, et al., 2015; Seifert, et al., 2013).

6.2 TASK CONSTRAINTS

6.2.1 Rules

Rules facilitated the discovery and exploration of pedagogical variability, which resulted in enhanced levels of effectiveness, creativity, knowledge, and skills. Ballet and contemporary dance imposed task constraints which contributed to shaping the acquisition of pedagogical expertise. Ballet rules were perceived by participants as being formal, structured, and with little development over time (Grant, 2012; Kassing, 2007). This limited variation over time in ballet was acknowledged by all participants. A consequence of ballet's limited variability was the stability of teaching behaviours. This stability of behaviours in ballet teaching contrasted with the unstable and flexible teaching behaviours in contemporary dance.

Ballet rules have emerged from participants' relationships with their previous teachers (Fortin & Siedentop, 1995). In some cases, rules were perceived in relation to a particular teaching style characterised by control (Mosston & Ashworth, 2002), and this perception has been observed to negatively influence participants' feelings of identity and competence. Ballet rules were also associated with the perception that teaching should be guided by an achievement goal, characterised by an ideal movement aesthetic to be attained by all learners. In general, it was reported that participants acquired the perception about an ideal movement aesthetic from previous teachers. These teachers utilised modelling as a teaching strategy in order to demonstrate the ideal movement aesthetic to be achieved.

Contemporary dance rules, in contrast with those of ballet, are characterised by their continuously progressive nature, coupled with unspecific subject matter (Bremser & Sanders, 2011). Participants found it more difficult to teach contemporary due to its variation in movement aesthetics; however it could be

understood that the struggle in addressing contemporary's disparity of movement aesthetics had a specific role: it exposed participants to significant teaching task variability. Participants explored significant variability within subject matter as well as teaching strategies because it is possible to achieve contemporary movement aesthetics by undefined movement.

Discovery and exploration in teaching contemporary stretched beyond the field of dance into other fields. Pedagogical approaches and subject matter from other fields such as sport, anatomy, psychology, and science facilitated participants' development concerning teaching effectiveness and creativity. Furthermore, exploration of diverse approaches to teaching facilitated the acquisition of knowledge and skills. Variability of teaching practice was central to overcoming task constraints mainly created by ballet rules. For example, in order to address teaching task constraints caused by the perception that students had about the movement aesthetics ideal, participants explored movement variability. The pursuit of movement variability could be identified from among all participants and it was goal-oriented. For instance, exploring movement variability was reported as a functional strategy to develop a range of skills that students needed in order to be successful in the dance industry. 'Variability' allowed participants to explore a variety of teaching situations where they could learn from that exploration and develop unique skills and abilities.

6.3 INDIVIDUAL CONSTRAINTS

6.3.1 Needs

Data analysis revealed that some participants' individual constraints (i.e., needs) influenced their search for and interaction with mentors. Their accounts concerning the satisfaction of individual needs identified a conscious decision to engage in informal mentoring processes (Chao, et al., 1992; Eby, et al., 2007) to assist in the development of their pedagogical knowledge and skills. Participants' accounts specified that their need for knowledge and self-mentoring influenced their engagement in mentoring processes. Two accounts revealed different ways of engaging in mentoring processes. One participant engaged in mentoring processes by finding mentors; whereas the second participant engaged in self-mentoring processes. These accounts suggest that the need for pedagogical knowledge is an

individual constraint which can facilitate different ways of establishing mentoring processes beneficial to pedagogical development.

6.4 SUMMARY

In conclusion, the current research study explored the acquisition of dance pedagogical expertise from a constraints-led approach and found environmental (e.g., mentors, role models, and students); task (e.g., rules); and individual (e.g., needs) constraints contributing to the acquisition of dance teachers' pedagogical expertise. The findings confirm the influence of previous teachers in dance teachers' pedagogical development; however, in this study, the findings additionally suggest that previous teachers may act as mentors and role models. Furthermore, the findings in this research project suggest that other constraints such as students, ballet and contemporary rules, and individuals' needs, are important to consider in developing dance pedagogical expertise. These findings suggest that the utilisation of the constraints-led approach was suitable to investigate the acquisition of pedagogical expertise by dance teachers.

Although these constraints were discussed as being influential in the acquisition of pedagogical expertise, it is noted that each participant experienced constraints individually. These individual ways in which participants interacted with constraints characterised each individual's pathway towards expertise as nonlinear and constrained by each individual's intrinsic dynamics (Kelso, 1991). Expert dance teachers appeared to be aware of their intrinsic dynamics, which influenced different rates of learning and maturation under the influence of unique constraints. Alexis's report, for example, is expressive of this awareness in reference to her initial development as a dancer and to her later pedagogical development.

> … when I was young I auditioned for ballet, but I was not the right type of dancer… So, I was very aware of that, you had to find the place where you fitted in. …I went to… …a place that would suit the way that I danced… Those qualities that I had. So, it was a way of developing those things that were inherent in me. Finding the right environment that I could flourish in. I took that learning very seriously.

The excerpt above illustrates that Alexis, while being a dance performer, learned that it is important to couple one's intrinsic dynamics with a specific

environment in order to be able to develop pedagogical expertise. This suggests that the ability to perceive and become attuned to affordances significantly influences the acquisition of pedagogical expertise. Therefore, further to being influenced by constraints, the attunement to key affordances in relation to one's intrinsic dynamics appears to be important in achieving pedagogical expertise. As a result of learning, participants perceived which environmental affordances might support successful development in relation to their intrinsic dynamics. This is in line with previous research on expertise, which acknowledges the existence of individuals' idiosyncratic pathways towards expertise (Durand-Bush & Salmela, 2002; Phillips, et al., 2010).

Previous experience as an expert dance performer appears not to be necessary in order to become an expert teacher because participants did not report it as being an influence on becoming a teacher. However, it is interesting to note that although previous experience as an expert performer might not be critical in becoming an expert dance teacher, higher education institutions might look to employ individuals who have a strong background in dance performance. Analysis of participants' developmental pathways in dance performance showed that all participants had achieved a professional level as dance performers. Moreover, a number of participants achieved the status of principal dancer in reputable Australian and international dance companies; therefore, it can be considered that they were expert dance performers. This suggests that having a professional background as a professional performer in reputable dance companies (Warburton, 2008) might have contributed to their becoming a dance teacher in their respective tertiary education institutions. This is in line with Sims and Erwin's study (2012) whose example indicated that one participant (i.e., Lee) got a teaching position in a tertiary institution due to his professional dance performer background with recognised dance companies and his master's degree in dance education. He had little teaching experience and he had no intention of becoming a teacher; that happened by chance (Sims & Erwin, 2012).

The practice of employing dance teachers with a strong professional dance performance background might not necessarily apply in other tertiary education institutions; however, the findings from this study together with those from Sims and Erwin raise questions in relation to dance teachers' pedagogical education. For

example, how much experience as a dance performer is necessary to become an effective teacher? What knowledge and skills transfer from dance performance to dance teaching? Can all expert dance performers become expert dance teachers?

6.5 LIMITATIONS

The findings emerging from this research study should not be conceived as a final and unequivocal truth (Sandberg, 2005) that excludes other possibilities of categorizing and describing the acquisition of pedagogical expertise in dance. Rather, the findings add to the ongoing process of knowledge creation (Sandberg, 2005) about dance teachers' pedagogical expertise. This is because teaching is highly complex, uncertain, and domain and context specific (Berliner, 2004; Bullough & Baughman, 1995). Therefore, complexity and specificity need to be factored into this study, because although participants might teach in several environments, they mainly teach in one specific environment: a higher education setting. It is, therefore, suggested that future research explore the acquisition of pedagogical expertise in other environments such as professional dance companies or non-tertiary level dance schools.

The interpretations outlined within this thesis emerged from a goal-oriented activity within the constraints-led theoretical framework (Davids, et al., 2008). This multidisciplinary framework was judged as suitable in comparison with others such as cognitive psychology (Anderson, 1990), in order to address complexity in pedagogical expertise. However, the constraints-led theoretical framework might not be the only framework capable of addressing complexity in the study of the acquisition of pedagogical expertise; therefore, other theoretical frameworks could be explored.

The sample size in this research project was limited to ten participants immersed in a specific tertiary education context; therefore, the results from this research project are linked to these ten participants' context. Future studies could investigate the acquisition of pedagogical expertise in other contexts and could include larger samples of participants.

It was not possible to determine the amount of time required to achieve pedagogical expertise in dance teaching, as it is unlike the field of sports where expertise can be measured by a specific standard of performance (e.g., winning

competitions (Baker, et al., 2015)). Measuring expertise is more difficult to establish within the field of pedagogy because it might be dependent on learning outcomes and the quality of those outcomes. Furthermore, expert teachers are characterised by being effective (Bereiter & Scardamalia, 1993); and from an constraints-led perspective, effectivity relates to the ability to adapt to interacting constraints (Davids, et al., 2015; Seifert, et al., 2013). Adaptability in these terms is a combination of stability and flexibility regulated by an individual's behaviour while aiming to achieve specific goals (Seifert, et al., 2013). Therefore, measuring students' learning in specific environments might form the basis for a suitable criterion for measuring pedagogical expertise. Furthermore, participants were classified as expert dance teachers according to a selection of criteria based on the expertise literature; however, this study did not include observations of participants' pedagogical practice to verify their pedagogical expertise. The lack of evaluation of participants' actual teaching practice is another limitation in this study.

The findings of this research project identified informal processes of acquiring teaching expertise and these findings add to the field of pedagogical development of dance teachers in Australia. However, in other contexts, dance teachers' pedagogical development could be achieved through formal processes. For example, in France, individuals aiming to become dance teachers need to obtain national accreditation. This study did not analyse formal processes related to the development of pedagogical expertise because previous research have found that expert dance teachers can have different formal educational backgrounds (Cairns, 2010; Chappell, 2007a). Furthermore, although some participants considered formal processes of education important as part of their pedagogical development, they did not consider that formal processes of education can lead directly to expertise. Therefore, the analyses of formal processes of education of dance teachers were beyond the scope of this study; this constitutes another limitation of this study.

6.6 IMPLICATIONS

Although previous experience as an expert performer is not necessary in order to become an expert teacher, the results of this study indicated that a certain degree of dance practice is necessary. This is aligned with previous research on pedagogical dance expertise that suggested that some degree of experience as a dance performer is important in expert dance teaching (Chappell, 2007a). Future research would

benefit from focusing on the exploration of what transfers (e.g., knowledge, skills, abilities) from dance performance to dance teaching.

Additionally, dance teacher training and development programs would benefit from exploring individuals' intrinsic dynamics and goal-setting. Furthermore, programs should include numerous opportunities for individuals to interact informally with mentors and peers, as suggested by Marion (e.g., "that collaborative kind of relationships is really important for keeping my teaching practice going, because the knowledge that we are getting from each other really feeds in". Additionally, these programs should include dance teachers' interactions with a range of students and in different genres (e.g., ballet and contemporary), as suggested by Roxanne (e.g., "having a variety of classes, with different levels, and different age groups, and different locations. You continually evolve as a teacher".

The ability to perceive and become attuned to key affordances in relation to an individual's intrinsic dynamics appears to be critical for the acquisition of pedagogical expertise because some environments may be more important than others in facilitating pedagogical development, as suggested by Alexis (e.g., "Finding the right environment that I could flourish in". Therefore, design of pedagogical practice could include a range of opportunities for individuals engage with to acquire pedagogical expertise. For example, formal as well as informal pedagogical training; the implementation of enjoyable activities aimed at the satisfaction of individuals' developmental needs; the creation of learning environments that facilitate discovery and exploration of several teaching strategies; and the establishment of opportunities for individuals to explore the unexpected, by manipulating a range of constraints. Above all, the design of such pedagogical developmental programs should avoid the pursuit of an ideal teaching behaviour.

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Appendices

Appendix A: Ethics approval

Dear Mr Jose Rodrigues

Project Title: Becoming an expert teacher in a professional dance performance context: An ecological dynamics approach

Ethics Category: Human - Low Risk

Approval Number: 1300000288

Approved Until: 6/06/2016 (subject to receipt of satisfactory progress reports)

We are pleased to advise that your application has been reviewed by the Chair, University Human Research Ethics Committee (UHREC) and confirmed as meeting the requirements of the National Statement on Ethical Conduct in Human Research (2007).

I can therefore confirm that your application is APPROVED.

If you require a formal approval certificate please respond via reply email and one will be issued.

CONDITIONS OF APPROVAL

Please ensure you and all other team members read through and understand all UHREC conditions of approval prior to commencing any data collection:

Standard: Please see attached or go to

www.research.qut.edu.au/ethics/humans/stdconditions.jsp

Specific: None apply

Decisions related to low risk ethical review are subject to ratification at the next available UHREC meeting. You will only be contacted again in relation to this matter if UHREC raises any additional questions or concerns.

Whilst the data collection of your project has received QUT ethical clearance, the decision to commence and authority to commence may be dependent on factors beyond the remit of the QUT ethics review process. For example, your research may need ethics clearance from other organisations or permissions from other organisations to access staff. Therefore the proposed data collection should not commence until you have satisfied these requirements.

Please don't hesitate to contact us if you have any queries.

We wish you all the best with your research.

Kind regards

Janette Lamb on behalf of the Chair UHREC Research Ethics Unit | Office of Research | Level 4 88 Musk Avenue, Kelvin Grove | Queensland University of Technology p: +61 7 3138 5123 | e: ethicscontact@qut.edu.au | w: www.research.qut.edu.au/ethics/

Appendix B: Participant information and consent form for QUT research project

Queensland University of Technology Brisbane Australia	**PARTICIPANT INFORMATION FOR QUT RESEARCH PROJECT – Interview –**
The acquisition of pedagogical expertise: an ecological dynamics approach QUT Ethics Approval Number 1300000288	

RESEARCH TEAM

Principal Researcher:	Jose Rodrigues, PhD student Queensland University of Technology (QUT), Brisbane, Australia
Principal supervisor:	Dr Eric Brymer QUT – School of Exercise and Nutrition Sciences
Associate supervisor:	Associate Professor Gene Moyle QUT – Head of Discipline Dance
Associate supervisor:	Professor Keith Davids QUT – School of Exercise and Nutrition Sciences
External supervisor:	Associate Professor Duarte Araújo Faculty of Human Kinetics, Technical University of Lisbon, Portugal

Description

The purpose of this project is to study the role of personal, task and environmental factors in the acquisition and maintenance of teaching expertise in dance. This project is being undertaken as part of a PhD study for Jose Rodrigues.

Participation

You are invited to participate in this project because you have been identified as an expert dance teacher.

Your participation will involve either a face-to-face or distance interviews (by phone or web assisted means) at a convenient location for you that will take approximately 2.5h of your time (over two interviews: 1.5h+1h). Questions will

include topics concerning how you became an expert dance teacher and what factors influenced your teaching expertise.

Your participation in this project is entirely voluntary. If you do agree to participate you can withdraw from the project without comment or penalty. Your decision to participate or not participate will in no way impact upon your current or future relationship with QUT.

Expected benefits

By participating in this project you may gain an increased understanding of your own teaching expertise. By exploring your individual experiences we may be able to identify relations between developmental factors and changes triggered by different activities and the potential for learning transfer between activities. Furthermore, it is expected that the understanding of these experiences will enhance the understanding of dance teaching expertise, therefore, this study may contribute to a general theory of expertise to include all activities. Moreover, significant implications can be obtained for policy implementation and developmental programs in dance education, teaching and training.

Risks

There might be minimal risks associated with your participation in this project. The potential risks from participating in this project might include feelings of minor discomfort when responding to interview questions that might result from recalling emotional experiences. If while responding to the interview questions you become distressed in any way you can withdraw from the study. In terms of confidentiality please be aware that all data will be stored securely by the principal researcher. QUT provides for limited free counselling for research participants of QUT projects who may experience discomfort or distress as a result of their participation in the research. Should you wish to access this service please contact the Clinic Receptionist of the QUT Psychology Clinic on 3138 0999. Please indicate to the receptionist that you are a research participant.

Privacy and Confidentiality

All comments and responses will be treated confidentially and your anonymity is secured. The project involves audio recording, however, you will have the opportunity to verify your comments and responses prior to final inclusion. The

audio recording will not be used for any other purpose and will be destroyed at the end of the project. The principal researcher and the transcriber will be the only persons to have access to the audio recording. The transcriber will sign a confidentiality agreement.

Consent to Participate

We would like to ask you to sign a written consent form (enclosed) to confirm your agreement to participate.

Questions / further information about the project

If have any questions or require further information please contact one of the research team members below.

Jose Rodrigues

Dr Eric Brymer QUT – School of Exercise and Nutrition Sciences

School of Exercise and Nutrition Sciences – Faculty of Health – QUT

(07) 3138 8288 (07) 3138 8744

j.rodrigues@qut.edu.au k.davids@qut.edu.au

Concerns / complaints regarding the conduct of the project

QUT is committed to research integrity and the ethical conduct of research projects. However, if you do have any concerns or complaints about the ethical conduct of the project you may contact the QUT Research Ethics Unit on (07) 3138 5123 or email ethicscontact@qut.edu.au. The QUT Research Ethics Unit is not connected with the research project and can facilitate a resolution to your concern in an impartial manner.

Thank you for helping with this research project. Please keep this sheet for your information.

Appendix C: Agreement transcriber for QUT research project

Queensland University of Techno Brisbane Australia	**AGREEMENT TRANSCRIBER FOR QUT RESEARCH PROJECT**
Becoming an expert teacher in a professional dance performance context: an ecological dynamics approach **QUT Ethics Approval Number 1300000288**	

RESEARCH TEAM CONTACTS

Principal Researcher: Jose Rodrigues, PhD student Queensland University of Technology (QUT), Brisbane, Australia

Principal supervisor: Professor Keith Davids QUT – School of Exercise and Nutrition Sciences

Associate supervisor: Associate Professor Gene Moyle QUT – Head of Discipline Dance

Associate supervisor: Dr Eric Brymer QUT – School of Exercise and Nutrition Sciences

External supervisor: Associate Professor Duarte Araújo Faculty of Human Kinetics, Technical University of Lisbon, Portugal

THE AGREEMENT

As this research involves questioning individuals about sensitive issues, I the Principal Researcher in this project, require you to sign this transcriber confidentiality agreement.

As the transcriber for this project you must:

- Keep all information related to this project secret and confidential.
- Not disclose to any person or make known in any manner any part of the project's information.

- Keep the project's information in a secure place so as to ensure that unauthorised persons do not have access to it.

SIGNATURES

This Agreement shall be effective when signed and dated by all parties.

Transcriber	**Name**	
	Signature	
	Date	
Witness	**Name**	
	Signature	
	Date	

Queensland University of Technology Brisbane Australia	**PARTICIPANT INFORMATION FOR QUT RESEARCH PROJECT – Interview –**
The acquisition of pedagogical expertise: an ecological dynamics approach QUT Ethics Approval Number 1300000288	

RESEARCH TEAM

Principal Researcher:	Jose Rodrigues, PhD student Queensland University of Technology (QUT), Brisbane, Australia
Principal supervisor:	Dr Eric Brymer QUT – School of Exercise and Nutrition Sciences
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Associate supervisor: Professor Keith Davids QUT – School of Exercise and Nutrition Sciences

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Description

The purpose of this project is to study the role of personal, task and environmental factors in the acquisition and maintenance of teaching expertise in dance. This project is being undertaken as part of a PhD study for Jose Rodrigues.

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Your participation will involve either a face-to-face or distance interviews (by phone or web assisted means) at a convenient location for you that will take approximately 2.5h of your time (over two interviews: 1.5h+1h). Questions will include topics concerning how you became an expert dance teacher and what factors influenced your teaching expertise.

Your participation in this project is entirely voluntary. If you do agree to participate you can withdraw from the project without comment or penalty. Your decision to participate or not participate will in no way impact upon your current or future relationship with QUT.

Expected benefits

By participating in this project you may gain an increased understanding of your own teaching expertise. By exploring your individual experiences we may be able to identify relations between developmental factors and changes triggered by different activities and the potential for learning transfer between activities. Furthermore, it is expected that the understanding of these experiences will enhance the understanding of dance teaching expertise, therefore, this study may contribute to a general theory of expertise to include all activities. Moreover, significant implications can be obtained for policy implementation and developmental programs in dance education, teaching and training.

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There might be minimal risks associated with your participation in this project. The potential risks from participating in this project might include feelings of minor discomfort when responding to interview questions that might result from recalling emotional experiences. If while responding to the interview questions you become distressed in any way you can withdraw from the study. In terms of confidentiality please be aware that all data will be stored securely by the principal researcher. QUT provides for limited free counselling for research participants of QUT projects who may experience discomfort or distress as a result of their participation in the research. Should you wish to access this service please contact the Clinic Receptionist of the QUT Psychology Clinic on 3138 0999. Please indicate to the receptionist that you are a research participant.

Privacy and Confidentiality

All comments and responses will be treated confidentially and your anonymity is secured. The project involves audio recording, however, you will have the opportunity to verify your comments and responses prior to final inclusion. The audio recording will not be used for any other purpose and will be destroyed at the end of the project. The principal researcher and the transcriber will be the only persons to have access to the audio recording. The transcriber will sign a confidentiality agreement.

Consent to Participate

We would like to ask you to sign a written consent form (enclosed) to confirm your agreement to participate.

Questions / further information about the project

If have any questions or require further information please contact one of the research team members below.

Jose Rodrigues

Dr Eric Brymer QUT – School of Exercise and Nutrition Sciences

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(07) 3138 8288 (07) 3138 8744

j.rodrigues@qut.edu.au k.davids@qut.edu.au

Concerns / complaints regarding the conduct of the project

QUT is committed to research integrity and the ethical conduct of research projects. However, if you do have any concerns or complaints about the ethical conduct of the project you may contact the QUT Research Ethics Unit on (07) 3138 5123 or email ethicscontact@qut.edu.au. The QUT Research Ethics Unit is not connected with the research project and can facilitate a resolution to your concern in an impartial manner.

Thank you for helping with this research project. Please keep this sheet for your information.

Queensland University of Technology Brisbane Australia	**CONSENT FORM FOR QUT RESEARCH PROJECT – Interview –**
The acquisition of pedagogical expertise: an ecological dynamics approach QUT Ethics Approval Number 1300000288	

RESEARCH TEAM CONTACTS

Jose Rodrigues — Dr Eric Brymer

School of Exercise and Nutrition Sciences – Faculty of Health – QUT

(07) 3138 8288 — (07) 3138 8744

jose.rodrigues@hdrqut.edu.au — eric.brymer@qut.edu.au

STATEMENT OF CONSENT

By signing below, you are indicating that you:

- Have read and understood the information document regarding this project.
- Have had any questions answered to your satisfaction.
- Understand that if you have any additional questions you can contact the research team.
- Understand that you are free to withdraw at any time, without comment or penalty.
- Understand that you can contact the Research Ethics Unit on (07) 3138 5123 or email ethicscontact@qut.edu.au if you have concerns about the ethical conduct of the project.
- Understand that the project will include an audio recording.
- Understand that non-identifiable data collected in this project may be used as comparative data in future projects.
- Agree to participate in the project.

NAME
SIGNATURE
DATE
Please return this sheet to the investigator.

Appendix D: Expert dance teacher interview questions

1 – The acquisition of pedagogical expertise

1. Can you please tell me a bit about yourself? What are your personal background and experiences about how you started to dance? How did you start to teach?

2. How did you acquire your knowledge of teaching?

3. What are the basic skills that you acquired in order to teach effectively? Was there a specific sequence in how you acquired them? In your opinion, which skills are more critical?

4. What are the advanced skills that you acquire in order to teach effectively? Was there a specific sequence in how you acquired them? In your opinion, which skills are more critical?

5. You are considered an expert teacher in Australia and around the world. Can you, please, tell me a bit about the secret of your success?

6. Can you tell me more about specific circumstances, or events, leading to the acquisition of your teaching expertise? Can you, please, provide examples?

7. In your view, how did your teaching expertise evolved? Were there any specific phases/stages? (Novice to expert teacher) What characterizes each phase/stage of development?

8. What has been the most difficult part in acquiring teaching expertise?

9. In your opinion does previous experience, or parallel, as an expert performer contributes to the acquisition of expertise at teaching?

10. What are the critical factors that can transfer from expert performance in order to support the acquisition (development) of teaching expertise? Are there any factors more critical than others? Can you, please, provide examples?

11. In your view, what are the critical factors from expert performance that could limit the acquisition (development) of teaching expertise?

12. What other factors not related to being and expert performer may be important to the development of teaching expertise? Are there any factors more critical than others?

13. In your opinion, does practice contributes to the development of your teaching expertise?

14. What factors most facilitated or impeded your teaching practice? Can you, please, tell me more?

15. Are there any other aspects that we have not yet covered and you would like to add?

2 - Maintenance of pedagogical expertise

16. What is it that you do, currently, to maintain your teaching ability at the highest level?

17. Are there any critical factors that might influence the way you teach? Can you please tell me more? Can you, please, provide examples?

18. Can you still improve or propose a better system/approach for your development as an expert teacher?

19. Do you have any process of self-evaluation? Can you, please, tell me more?

20. If when you started to teach you knew what you know now, how would you go about your development as a teacher?

21. (Optional if not mentioned) Do you have any current role models/mentors concerning your maintenance of expertise at teaching?

22. Are there any other aspects that we have not yet covered and you would like to add?

Appendix E: Interview with Isabel

Date: 26th July 10am

Part 1: Teaching Expertise Acquisition

1. Can you please tell me a bit about yourself? What are your personal background and experiences about how you started to dance?

I danced as a child. Just wanted to do it from about the age of two. My uncle put me into ballet and it just went from there. It was just a lifelong ambition. Something that I really enjoyed doing and wanted to do. And I was just one of the luckiest that made it through, to make it a career and a profession.

1.1. And, how did you start to teach?

Well, where I learnt locally, I did not just learn ballet, I learned tap and jazz and all sorts of things. So, that school sort of sponsored me to do a teaching diploma in two different dance syllabuses. One was the Royal Academy of Dancing and the other one was the Commonwealth Society of Teachers of Dancing. So I started two teaching degrees, probably between about the ages of eighteen and twenty one. And at the same time I was training at university and sort of starting my career as a dancer. I was not interested in teaching at that stage at all. Sort of just in the place to do it, and just did it for a qualification with no long-term goals of any teaching. Joined a ballet company and then started to get involved in their education programs. So, when we would be on tour, I started up small workshops for children in regional cities and towns. And we would offer workshops to them. And that went on for several years and I designed those programs and wrote them. Until it got to a point where I thought where I needed to have something behind me to qualify what I was doing. And I started going to schools and I just felt I needed an education degree to really add that up. Also by that time, I was thinking of leaving the ballet company. So I had applied for some jobs in schools as a dance teacher. But that is impossible without that education degree. So, that was really my push there to go and do it. So, then I came back to university and did a grad diploma in middle years education. Which always was separate to what I did in dance. Then from there, I started teaching in a primary school part time. And then this year, once they learnt my dance background, I have got in, as a dance specialist teacher now. So it is sort of becoming full circle there as well. So there is that component of my teaching, and I also teach

ballet at the dance school and sort of pre-professional. Prior to that, I have been a rehearsal assistant at the ballet dance company. So, I also took classes for the ballet company. And a little bit for the touring companies; you know when the musicals would come to my city I have done a little bit of that sort of work. And then, probably my third component of teaching is with children within dance syllabuses particularly with the Royal Academy of Dancing. I teach a lot in there to become a teacher tutor as well for them. So, implementing new syllabus in class and instructions.

1.2. Would you like to tell me a bit more about those early experiences in the Royal Academy of Dance and in the Commonwealth Society of Teachers of Dancing?

That was the syllabus that I trained in, so it was sort of like the next step. I think there was a changeover of how you would get your teaching credentials at that time and if you didn't get it done by a cut-off date, then it was a much lengthier process, which it is now, and a lot more expensive. So I think that was really the drive for me to get those teaching qualifications more than any desire to actually be a teacher there. The desire to teach came much later.

1.3. How did the teaching qualifications happen? Was it like an exam?

We had a tutor, so there might have been three of us sitting on the teacher exam and we would work with a tutor every week. And go through the syllabus and teaching I guess methodologies and pedagogies. Knowledge of the syllabus was also a big component in those days. Which, I guess, still is a little bit, you know… But, the pedagogy and methodology is more important now than the actual syllabus knowledge. So, I suppose when I look back, I was very agreeing. Just went in, and did what the teacher told me and got that qualification. I was just very naive. That is all it would have been then. I guess most people are not eighteen; when you look back thirty years and go where I have come.

1.4. You mentioned that you started to teach at a ballet company. Can you tell me more about that?

Well, I trained with that company. So this was the director prior to Jordan Bolton at the ballet company. So, Steve Bacon and Melissa Stansfield, they had a very big training program for dancers. And it was a big part of the company and the

company structure. So I worked with them for twelve or thirteen years, so just from working with them daily. Particularly Melissa instructed me on how to structure a class and what goes into it, and what comes next. And how this happens, I guess sort of structure. Although my pedagogy is very different, but how I structure a class is very much based on their philosophies. How they do it. And it just happened that way. She would give sort of like a cross over thing, you know. Small company bar performance to performance. And they would watch, and then they would give feedback on, you know. What happened and why this exercise was probably less effective for this time of the evening. So, you know the differences between giving the company bar the first thing in the morning and giving it in the evening before a show. Just all of those things. So, it was very verbal instruction. No courses, no qualifications. It was just the passing of knowledge.

1.5. So more in terms of Mentorship.

Yes.

1.6. You mentioned that your pedagogy is different from what Melissa taught you. Would you like to tell me a bit more about that?

I guess because I am probably a couple of generations behind her. So, I guess, my teaching philosophy is much more student centred, rather than that very hierarchical teaching method that happens in ballet as teacher as the expert and dancer as the student. I think I like to try and teach a little bit of on an even keel. To be honest, I do not know everything. There are things I will suggest that will work for you. There are some things that will not work for you. So, I guess I am less dogmatic in my teaching approach. Particularly I would work a lot with teenagers in their late teens. Which I find are very specific cohorts of students to work with. Like it is not just their bodies their dealing with, but a whole lot of hormonal changes and changes in where they are moving from high school into university and then into jobs. There are a lot of insecurities. So I find that they need a very different philosophy in pedagogy. To I guess what teaching with someone in their thirties in a ballet company would require.

2. And how did you acquire your knowledge of teaching?

I think a lot of it just being experienced and watching other people. For ballet particularly, there were always certain teachers that stood out from the way they taught and how they taught made more sense.

2.1. Would you like to tell me more about those experiences, and experiences you gained from watching other people?

Yes. If I take it from a school perspective, because that is probably still where I am learning the most. Just watching how other teachers deal with personalities. As a teacher, behaviour management is a really big thing, but I find difficult as I am generally a calm person. I do not raise my voice. And, watching other teachers teach, particularly those lower grade students, there is a lot of yelling and big voices. And, not aggression but a bit of tough love. And I am not very good at the tough love stuff. You know having to be hard and forceful, just very strong.

2.2. How do you feel about that?

That makes me very uncomfortable. And that makes me feel a failure as a teacher. When I have to resort to raising my voice and being angry, a lot of the time it is an act, you know… I know I have to do it to get their attention, or for those little ones to know who is boss. But for me, I feel like a failure doing. That is sort of not a good experience and that is not a good teacher that I want to be. But I am still exploring those avenues in those early years. How not to be like that. Whereas, if I speak about my older students, you know, I can be very calm in a relaxed environment. I feel very comfortable with older students. I think they relate to me well as well. There is an understanding between us.

2.3. So when you say older and younger. More or less how old are they?

So, when I am saying younger. I would be saying from about eight years. You know from sort of five to eight. Old years would probably be from about ten to probable eighteen. But specifically I teach year elevens and twelves, which is about sixteen, seventeen, eighteen year old. So they are probably where I feel the most comfortable.

2.4. What type of skill level do you teach? From eight, are they still beginners? Trying to learn? Do you also teach pre-professional?

So, those ones that are between sixteen-eighteen are pre-professionals. So they are in a full time dance course.

2.5. So is that here in university?

No, that is at the dance school.

2.6. So you mentioned that most part of your knowledge comes from experience and watching other people. Are there any other sources of knowledge?

I guess I do a lot of professional development. Because that is an requisite for the Royal Academy of Dancing and as well as for teaching. So, those… Professional development hours come from a whole variety of things such as understanding curriculum, behaviours management. You know, right down to things such as disabilities and safety training. I watch a lot of things. I make a time to go out and view other people teaching. This is probably a big one. Discussions with colleagues are probably another one. I am a talker. I believe that in teaching, in particular, for teen practice, I do not enjoy teaching in isolation. I think having a teaching partner or a colleague close is really useful. And again, because I have lived by that philosophy that I am not the expert, I would like to have someone to sound of and sounds things again. Like, how does this work and how does this work for you. And what can we do to make this better. So I have a long-term teaching partner. Particularly with the Royal Academy of Dancing and teaching in a private studio. So we work very closely with discussions of not only the technique that we will be teaching and the style that we would be teaching, but also the children behind that, and who we are teaching. And how their personalities impact on the work that we teach.

2.7. So do you personalize or individualize for each student?

Yes, I guess we do to a certain extent. There is a differentiation that has to happen between each person in that room.

2.8. And why do you do that?

Well because children, students are so different. Like there is no one teaching method that would suit a class of twenty kids. So you have to be flexible I think in engaging each child with what is interesting to them. Some kids would learn really well using a visual, and I am a visual teacher because I am a visual learner. So I use a lot of images. Relevant images. Things that are a little big, I guess. Not traditional

ballet teaching. I like to take it off a bit and make things a little bit fun for the kids to get the idea. Some kids are kinaesthetic learners. They will learn better by touching. So, I know that I have to, you know, tap this muscle and that is the muscle that you are going to initiate this movement with. Or they have to feel it on the floor and find the muscle, bone, or whatever the line, and articulate it on a surface. Some kids really need a really gentle approach, you know. That it is not confrontational. Whereas, other kids will need it more confrontational. Like they need the challenge, and that push and, that drive.

2.9. How do you understand that some kids need a bit more confrontational teaching?

The more that you work with them , the more that you can understand the sort of child that they are. And how they respond to different things. Particularly with those early years one's going from eight and under. For some of them, you can yell until you are blue in the face and they would be no response. Whereas, sometimes, gentle touch on the shoulder to get their attention is a much more useful method of how you can get them to listen and engage. So I think it is spending time with your students even within that cohort and that group that you get a better understanding. Trial and error I guess. Try something, and if it does not work. Then you just keep changing philosophy.

2.10. It is interesting that you mentioned that you learned mostly from experience and watching other people, in contrast with formal professional development. Why do you think that happens?

I guess again it is the experience. It is being in the moment and watching other people I guess. Even make mistakes, watching them. What and how they do and borrowing those ideas. And then trying to impart that onto your own teaching and when it fails. You learn best from your failures and when things do not work. For instance, if something does not work I will put that away and try something different. So maybe for me it is a challenge. That I like to experience myself and try and see. Can I make a difference? Can I make it better? What can I do differently? Whereas, I guess, formal professional development, you know, sometimes just sitting there listening is less useful. Although by the same, you take away that information and you can still impart that on your classes. But I think it is the face-to-face experience. Human to human.

2.11. So what is difference between face to face and sitting?

I guess it is the interaction. It is the interaction. And like I said before, it is that feeling of working as a team. Bouncing ideas. Whether it is a colleague or a student, you are still feeding off someone.

2.12. You also mentioned that you are a visual learner. Would you like to tell me more about that?

Yes, I learn a lot when someone gives me an image. For example, to do an arabesque; one day someone said: "Do not think about turning out your leg, make your knee cap face the wall". And for me that was a really strong image. So it took away all the technical refinement. And just thought of a knee cap with a smiley face. And that would be my image that I would think of to have my leg turned out at the back. So those sort of things work better for me then technical jargon.

2.13. And how does that relate to how you teach?

Well I guess I use that because that is how I learn. And I figure that if there is one of me, there is going to be somebody else that learns like me. Not necessarily everybody. But, you know, it is something that I understand and that I find then to pass on to somebody else. Sometimes those images are a bit wacky which relaxes the class. And sometimes when you relax is when you produce your best work. And then you can hit your greatest learning curve. Which is when I guess your mind is relaxed, your body is relaxed and you are comfortable in that environment. And that is what I really work for, that my students feel comfortable.

2.14. You also mentioned that you are not a traditional ballet teacher. Would you like to tell me a bit more about that?

I do not like the traditional hierarchy of how ballet is taught. That the teacher stands in the front and the students imitate the teacher. And it is sort of a 'You are the boss. The almighty that knows everything'. I do not think that that is an effective teaching method in 2013. I do not think that the people coming up now respond to that. And even being a part of a ballet company, in my later years, there were dancers there that were fifteen, sixteen years younger than me. And a lot of their attitudes did not fit that traditional teaching mode. Whereas, I learned under it and I operated under it. But they do not. But there is a rebellion against that. And, I guess, as someone older, I had to change my teaching to be able to engage or understand or to

be able to teach the next generation that are coming through. Because they will not just stand that you are the expert. We live in a different society. It does not fit into the mentality that our children are brought up in.

2.15. So you feel that the traditional way of teaching ballet is still current in 2013?

Yes, I do very much. And I think a lot of teachers still teach that way. Even when some of the teachers in the ballet company that I watch, still teach in that traditional hierarchical sense. And maybe there is a certain need for that still. I am not saying that it has to be thrown out completely. Because, perhaps, there are still certain people that would work on it that way, and would embrace that method. But I think that we have to think outside of it as well.

2.16. Because there could be other ways to fit individuals.

Yes, or a combination of ways.

3. And what are the basic skills that you acquired in order to teach effectively?

Well I think I have to had an understanding with, I am going to say, my own body. And I do think that having been a professional dancer, I have a very good awareness of my body. I did not have an easy body to work with as a dancer. I had to work very, very hard to find my technique and my style. And I think that struggle feeds back into my teaching because as a result of that I have a very good understanding of placement and line and transference of weight. And all of those technical things from a ballet point of view because I had to work with my own body. I think a lot of dancers that have an easy body to work with, sometimes miss that understanding of their body. Because it just happens naturally. They do not have to have the same thought process.

3.1. Are there any other basic skills that you acquired to help you in your teaching?

I think personal skills are a big part of teaching. Like how you can relate to people. A lot of it is I guess public relations, and how you can hone into those individual students. Like we spoke about before, differentiating their class. But also doing that for them, as a person. And knowing what those people require and what they need. Being a teacher is not about just having one personality. For example, if I

go and teach women in their fifties and sixties, I have a whole different person, then what I would do if I was teaching a seventeen and eighteen year olds. So, my teaching practice has to reflect the people that I am actually teaching. So, I guess, you become a chameleon of some sort. So you would adapt to your environment, and that is, I guess, a skill. As well it comes with, the more that you teach, the more that you know people, the more that you interact with people.

3.2. And which skills are more critical?

I think empathy, a sense of humour, particularly working with old people. But I guess all over you need a sense of humour. Ballet is a performing art, so you are in front of a mirror. So, as a dancer, it is a very confronting situation to be in. Things go wrong, so I think as a teacher you have to find sometimes the lighter side of the moment. And to find the artistry of dance, not get bobbed down into the technique of it. So I guess that is another personality that you need. A sensitivity to do your teaching as well as to the people that you are teaching.

3.3. Other than personal skills and understanding how your body moves do you feel there could be any other basic skills?

I guess you got to have knowledge of what you are teaching. And how you are teaching it. Like there is one thing to dance, but you have to have a structure that you are going in to teach. And again, that would depend on the context .of where you are teaching. Like my life has a lot of context, and into those contexts, are very different to how I approach before I walk in and teach that class. And the planning that I have had to do prior to walking in that door. So structure is a big thing.

3.4. So, can you tell me more about structure?

So, for example, if I walk into a company class to teach a company class; I have to know that they have an hour and a quarter to get through this bulk of work. And it needs to be of this level. I need to know that they have had a hard day yesterday. Today's class might need to be a lighter class. With an easy day yesterday, maybe a Monday morning; it needs to be a heavy class to get the week back started, If I walked into, let's say a class of twelve year olds, I would know that their technique is not yet there. That sometimes less is more. Let's just use four exercises that we are going to work on in the next forty-five minutes. And really work on those with an intensity rather than trying to cover fifteen exercises.

3.5. How do you find out about these details?

So it is speaking to other people. So if you are team teaching it is having a communication with that person beforehand. If it were for a company class you would speak to the rehearsal director, speak to the dancers, and speak to the director. For the purpose of a twelve year old, you would speak to my colleague who would have taught them two days earlier. Or for me, I keep a log of where those kids are. So some kids I will see two or three times a week. So I have a log of what we did that day and what needed work. If it were at school I would have a teaching plan, so that each lesson is broken up into certain stages of what I am going to teach that day. And what we get to we cover. If we do not get to some then I am going to have to change the structure of the next lesson.

4. If these could be the basic skills, do you feel there could be more advanced skills that make you teach more effectively?

Yes, I think maybe the advanced skills come with experience and the more that you work with people and teach people. And, for me, teaching, I find the biggest thing is behaviour management. And that is not just with little ones. That goes right through to pre-professional level. There is a certain discipline involved with dance. Just the same as I guess with a martial art that has to be taught. And to get that discipline, to teach the discipline of the art form I think takes experience. To have a concentrated, not always quiet room but a concentrated room, rather than the kids ruling the roost, you know, lots of talking and talking within exercises. And I guess, a lack of engagement with the teacher.

4.1. You mentioned that someone needs to have experience to do behaviour management, what do you mean by that?

Well I guess experience working with children because from a personal experience. You can read about it, you can go to uni and watch DVD's and be lectured on it and take exams and you can write plans and how you are going to deal with kids that are like this. But until you are actually in a studio or a classroom with those sorts of people, and that are cohorts of students. You just do not know what is going to work. It is trial and error. What is going to work and what is not going to work? For me personally, I find it easier with teenagers and up years. I find that I can relate to them better. And I find that we have a really nice balance. Or maybe there is

a respect between the dancers and myself. This is what I expect, we can have a good time but when it goes over the boundaries then they respect me enough to pull it back in. I do not feel like I have that with younger children yet. I do not have that. If it is mainstream normal, normal it is a terrible thing to say. If it is a mainstream, easy natured child it is okay. But if it is a child with behaviour issues with some sort of learning disorder, then it just turns everything around. It is very frustrating and disappointing.

4.2. So other than behaviour management, are there more advanced skills that you associate with?

I guess the advanced skills just mean that everything else that I have spoken about are more refined. So, your class structure becomes more refined. Your planning is more refined. I find that the more that I do this; the easier it is for me to pull away. And I do not actually have to write everything down anymore. Like, I can just do it instinctively. I can see what they need instinctively rather than always...

4.3 Why do you think that happens? That you do not have to write it down anymore?

Confidence. I think it is the confidence in yourself and your own teaching capacities. And also confidence in what you are teaching. So for me, if I use it again as a personal experience, to teach chemistry, I have to do a lot of planning. And my strategies for teaching chemistry are very basic. Whereas to teach ballet, I find that intrinsic, like a second nature. I could tell you anything about any movement and why it is working and why it is not. I could analyse to say why that turn fell over. Like I have that knowledge and that expertise and that experience to do that. Whereas chemistry, I guess it is not my key teaching area. So it is a less experienced area to teach.

4.4 You mentioned that experience is a critical factor in order to become an expert teacher. And you also needed knowledge. But then you mentioned that for chemistry you still need to plan a lot and do a lot of thinking and for dance you do not anymore. Because you have experience and you acquired knowledge. But what exactly happens during this process? How do you acquired the knowledge and experience? What makes you more confident?

Well I guess when we do it, the more mistakes you make, and the more times you have to pick yourself up and find a way of making it work. So I guess repetition. You just do it more and more. Sometimes you can pre-empt what is going to happen so you can make it not happen. Or you can pre-empt it is going to happen and use that as a learning experience for the students.

4.5 So how do you pre-empt?

Well I guess it just links. But I keep saying, the more that you are involved in that situation the more you can read something. I guess it is like if you got your own children you know their behaviour patterns that you could almost see when they are hyped up and if they are about to hurt themselves. You could sense that it could be about to happen. It is the same when you teach. You get to know your students and your situation so well that you could almost read it before it happens.

4.6 Is it fair to say that knowledge of the students (because you interact with them) and knowledge from the environment, the context, you know? What they did before, what level they are doing? So, it is by knowing or interacting with these factors that make you pre-empt what is probably going to happen? Because you have that previous knowledge?

Yes.

5. I would like to move now onto expertise. You are considered and expert teacher in Australia. Can you tell me a bit about the secret of your success?

I think it is the diversity. I think maybe it is my ability to work in a whole cross section of the community that I can work with three year olds and that I can work with eighty three year olds and I can work with everything in between. So I guess it is that ability to be able to adapt within that environment. I guess even as a dance teacher my specialty is ballet. But I find now I am teaching funk and samba and much more community dance skills, even though that is not my area of expertise. I think because I am comfortable as a teacher now, and comfortable with that being able to try new things and be outside that box.

5.1. You mentioned that ability to adapt to different environments. How does that happen?

Well I just that it is an understanding of people. I think it is huge personal skills and interpersonal skills, and how you relate to people. I like to think that I do relate to people well. I do have a nice understanding of people. I do have high expectations but they are realistic expectations, which I think people appreciate. I do make a point of making dancing fun, regardless of what this outcome is. Whether it is for a ballet company of professionals or whether it is just a group of eight year olds dancing at school. Because, I think that is what dance is about. You know, essentially it is a performing art and it should be enjoyment not punishment. So I think all of those things, I hope, all of those things are reflected in my teaching practice.

5.2. You mentioned that specific environments, or specific contexts, might have different people. So, how do you understand, or how do you know, that this is how I have to address this situation?

Well I guess you make assumptions to start with, you know, if I go into a group of sixty-five year old women, I am making an assumption that they are there for fun and there for a social reason. And they are there to communicate with each other and use this for, not just about the dance, but it is also about maybe a social event. So the way that I would communicate with those people, it would be a quite relaxed manner. They are obviously there to learn. So to give them instruction, but to also give them also, I guess, a jovial atmosphere that we are here for fun. Let's not get bogged down if the body cannot do a full plié, or if you cannot jump high. That is not the purpose. I guess, it is what is the purpose of your class. The purpose of the class then would dictate how you would relate with those people.

5.3. How do you understand if your assumption is right or wrong?

So I guess how those people, what feedback you get from them. So, body language, their facial expressions. For those old ladies, do they talk back to me? Are they going to communicate with me back? All of those tiny human indicators. Say, if a person is feeling comfortable with the class or happy with the class. Likewise if it was with professionals, you know, I would have to see if I see a whole bunch of them leaning against the bar, head out the window, you know, looking very exhausted. I would then have to address, am I approaching this class wrongly for where these people are today? Maybe I would have to say: 'are we okay today?'. You know, are their bodies sore? Was yesterday a bigger day then what I had been told. Do we need to pull back? Or do we need to push forward. Do we need a fast class in talking

today? You know… And sometimes, I guess people's body language would dictate that. You know if they are really chatty in class, they are probably feeling pretty okay. If it is a pretty sober class you need to be sensitive to those needs as well.

5.4. Is there anything else that you would like to add to what it is that makes you an exceptional teacher?

It is just, like I said before, that I understand my body well. And I had good trainers that explained to me how to work my body. And that just gives me a good sounding board to pass that knowledge on to other people. And then from there, as a teacher. And also to be able to think laterally as a teacher, to think okay that did not work well there with that person. How can I reinterpret that information to make it relevant for somebody else? It is always, here is me. I can come down here and pass my information. This person took it and it worked for them. This one did not I have to work sideways and find out how can I get this information to them and how can that pass through.

6. Can you tell me a bit more about specific circumstances or events that led to the acquisition of your teaching expertise?

Yes, for me as a dancer, I had a confrontation with my director about something. And his words to me were: "You just need to relax and enjoy where you are!" And I was particularly upset but his words were very true. And I, retrospectively, I thought a lot about them, and it was a real turning point for me. I feel like I took the ego of the dancer away and stated to look at a nicer picture. Like I suddenly felt my, I guess, seniority in the company at that point. And then suddenly I need to foster other people. And I started to look beyond myself and look at other people coming up underneath me, you know. And made a point of talking with those people and complimenting them and saying that was a really great show or really liked what you did. And that fell very liberating for me, to be able to praise somebody else and to suddenly look beyond. I guess dancing is a very selfish job. Particularly if you are very passionate about it, you become very internal about yourself. It was just a very nice liberating moment for me to look at other people. And I think that was the starting of my interesting teaching of what I could give to other people. Sometimes I think about it as a moment of altruism. Or was it a moment of me feeding my ego still, making other people feel better, made me feel better. So it is probably a very fine line and that is sort of my turning point for

teaching. And I felt that I just had a lot more to give, and it just went through from there.

6.1. So, were you a dancer?

Yes, I still was a dancer. I had no interest in teaching. I did not want to do it. I never wanted to.

6.2. When was this?

This would have probably been… I would have been maybe twenty-seven. So I would have probably had nearly a decade of dancing experience. I have done a bit of teaching in and about, but nothing too thoughtful. There was no process or anything involved in it. I just sort of did it. And that was, sort of, I think my turning point. And then the more that I learned, the more I wanted to know. And the more that I wanted to branch out on my own discipline and look further of how other people teach.

6.3. And where were you dancing at that point in time?

I was with a ballet dance company at that point, and I had a very good director who was very nurturing because he was a teacher. And he is a very good teacher. And a very wise, knowledgeable man who knew a lot about a lot of things. And it was very encouraging. I did my master's degree while I was dancing under his direction as a professional dancer. And he really encouraged and nurtured that academic thing which is pretty unheard of in ballet circles, you know. He gave me time off work to come to lectures and gave me time off work if I had to sit in an exam so I can get it through.

6.4. Would you like to tell me a bit more about your relationship with him and how he might have influenced you?

Well, he was an unusual director in ballet things because he was very thoughtful and he liked his dancers to be educated. So he really encouraged us to study and it started with me. And then there was a lot of dancers who came in after me that all started part time uni degrees while they were dancing professionally. And he really nurtured that, and let that happen and allowed that to happen and I think there was a respect for that happening because he was such a clever man as well with a thirst for knowledge. So it was a different meeting point, rather than just meeting on a dance plain. It was just other levels of communication in there as well.

7. In your view how did your teaching expertise evolve? Do you feel like there may be any stages of development?

I think my next point of call would probably be when I did a teaching degree in just general education. So I could not get into the dance teaching degree at university. So I had to go in as a general classroom teacher in middle year, so in primary school level. And I think, for me, that was another big learning curve to be a nobody when no one knew you and no one knew what you knew. And that was quite liberating to be anonymous. I really liked that feeling. And I liked the feeling of learning without any pressure. Because no one knew me anyway. And that was a big learning curve to do that. And to go work in a school, that was sort of another big moment to go, 'Oh my God! What am I doing here?'. What am I doing in a mainstream school?' All I have ever done is the arts and worked in the arts. And working somewhere else where there is no art people and in a normal job and, that was a strange moment. And wondering, 'have I done the right thing?' Am I doing the right thing"? But, I guess, that teaching practice with mainstream children, non-specialized children has been really a big factor in me teaching now dance because I have an understanding of where they are coming from at school. Like, what is the school structure? Someone said to me once: "to understand a system you have got to live it, you have got to be immersed in it". And I guess that's what I did. My feeling was if I could immerse myself in this situation, I could make a difference for what comes on the outside as well. For me as a teacher, and also for you changing the mindsets towards the arts and these kids for when they finish school. You know… Big dreams. They are going to change the world with my teaching practice. But there is always one, I mean, there is people who have taught me particularly at university that have probably framed the way that I have approached things. The way that I think about things.

7.1. Would you like to develop that as well?

Yes. Well, there was one lecturer, particularly who was very broad-minded, and a lot of her philosophies of life I guess have impacted how I teach. I am trying to think why specifically she made such an impact of my life. I guess that her love of ballet particularly and the academic approach that she could take towards it, impressed me. And, I guess, for a long time made me think that I was going to retire at twenty seven and become a university lecturer like her because I liked her

influence. Another teacher I had, he taught, I guess, very psychologically. You know he said one day, 'my parents gave me something for my birthday and I feel guilty because it cost a lot of money' and… but… they… He turned around and said. 'Yes, but they are your parents, don't you think that made them feel good to be able to give that to you'. To turn the experience around so I knew that it was not about me. And his teaching practice was about that as well. He worked a lot on touch, you know, touching, tapping the muscle. Or reverse psychology if you were hopping in a turn.., 'Now deliberately hop in a turn', you know, 'hop twenty times'. And, then, turn around 'do not hoop, keep the knees straight', You know, just psychological issues. And I know that I still employ a lot of that in my practical teaching skills as well.

7.2. Do you feel that in your development as teacher there were some role models or mentors that influenced you?

Those people were definitely mentors. Probably not mentors, because I was still a student in those times and would have taken on those ideologies. But probably as a mentor Melissa Stansfield from the ballet company was probably my biggest one. I think we were a little bit similar in how we learnt. She was very meticulously organized. She was very structured and musical. Very logical, and that still impacted me and was a mentor for me even though she is not in the ballet company anymore. She often had offered to come back and watch me teach class and helped me give me some sort of peer assessment on where I need to work more. Where I needed to focus on. You know. Perhaps what slipped and I sort of rely on her opinion to a certain extent on that technical training because it worked so well for me. Other mentors I guess outside of dance are some very experienced teachers that I worked with at the school that I teach at. They never seem to yell. They just have such a control over classroom which sometime s I do not feel I have outside of dance. And when I speak with other people about it, particularly my dance partner, she said employ what you teach and use for dance. Those same strategies put them into a mainstream classroom. That is sort of where I am making the link between how I teach dance and how I teach at school, trying to find the middle ground and pull the two into together. So that is my work in progress. And I am not there yet. And it is very frustrating, it is very demoralizing. I have wanted to throw in the towels several times, but I think the challenge keeps pushing me back to work it out a bit more.

7.3. You mentioned that you tried to transfer some of the skills from outside of dance. So, would you like to tell me a bit more about that? What is it that you find similar or helpful to be applied in dance?

Maybe the structure of it. School teaching is very structured. It follows a national guideline now. That you follow it this way. It is when you learn to be taught. It is about lesson planning, and how the lesson flows, and how it goes from here to here. And how it transitioned from an introduction to your first lesson of the day. And how you settle kids down when they come in from having a break .All of those sort of tiny intrinsic skills are easily transferrable in the ballet studio working with kids. So I guess now when I teach a ballet class, not only do I think how its structured, from a ballet perspective, but also how I can structure it. I guess maybe from an organizational perspective. Like to calm the kids down quickly and to get them into positions quickly. To mark the roll quickly and effectively with quiet. With them settled. I guess, it is just teaching practice that is the teaching discipline.

8. What has been the most difficult part in acquiring teaching expertise?

See my first instinct is to say it is been quite easy because it just happens that I am more interested in something than more people have been more interested in helping me. Maybe if I think about it outside, I am lucky in dance because I come from my city. I trained there so I know a lot of people. So I have never fell short of people. To help me. Maybe in my other teaching practice outside of dance. Not knowing people is hard. Not knowing the environment is really difficult. Taking that step, I tend to hold right back if I do not know people I am comfortable with. Lack of confidence maybe has been difficult for me because I see these very accomplished expert teachers with such amazing control and I am not like that. And that has been a really difficult point professionally to get backwards to that point.

8.1. In terms of confidence you mentioned that knowing the environment and context helps you to be more confident. So, to that extent, knowledge of the environment and knowledge of the content are the two most critical factors that might help you to get more confident in teaching.

Yes. I guess part of it and the experience as well would have to go in with that. Because you can understand your content and your context perfectly. But you have

not had the experience of putting that into practice, it is probably less confident. It needs to have that in there as well. Those three combining factors.

9. So, concerning your previous experience as an expert performer. In your opinion, does previous experience or parallel experience as an expert performer, does it help to acquire expertise in teaching?

I think it does. I think for your student, it instils a bit of confidence. Particularly when I was dancing. But people had a faith in me as an expert dancer. As a teacher I was imparting maybe knowledge, which somebody else could not give them. And, I guess, maybe to a certain point that is true. Particularly that performance experience and that artistic experience. And unless you have done it, that would be hard to teach. But I do not think that being a dancer necessarily makes you the expert teacher, just because you've been a dancer. I think there has to be a desire to impart knowledge and an ability to do it. Like I said earlier, I think that some dancers find it difficult to teach and pass their knowledge on because they actually do not know how they are doing it themselves. Because it is so simple. Like, they are so naturally gifted at dance that there is no thought process. How their leg gets turned out at the front, would be much less like myself a person with a difficult body to work with. Like mine had to be a more thoughtful approach to dance. Which is probably why those people are principal dancers and why I was never a principal dancer in ballet. But I think it is more difficult for them to share that knowledge because they have not had to think about it sometimes. I am being very generalized here and just thinking of people in my own experience. That I have seen teach that were brilliant dancers that found it hard to then teach. All were not interested in teaching. I think there also has to be a passion for teaching that, you know, you want to share. And if you do not want to share, then your teaching practice is not going to be as highly refined as someone that does.

10. You mentioned that previous experience might be important, but it is not absolutely a requirement. But it might be important. So what do you feel might be the critical factors that can transfer from expert performance in order to support the acquisition of teaching?

Maybe the ability to explain things better. To explain how to do something. To be able to explain how it feels to do something, rather than just, here, do this step. As a professional you can say, 'this is how you should feel doing it'. You can also

demonstrate it, ‘this is how it should look’, ‘this is the result you should achieve or you can achieve if you work it this way’. And maybe as a dancer also you have been trained. You have worked with a choreographer or director who has spent their whole day with you refining how to do that step. So maybe there is some more knowledge within it as well because it is been worked on you. It is not just being learnt out of a book or at a course. You have actually physically experienced it.

10.1. Do you think that there are some factors that are more critical than others? What are the most critical factors? Because you mentioned the feeling of the movement.

I think feeling is a big one. And I see it with my kids that I teach. Sometimes I wish I could just pull out my heart and let them borrow it just to know how beautiful that feels. Maybe if you have not been a dancer yourself, you have not got that internal memory or that muscle memory of how glorious movement can be. And perhaps it is harder to impart that knowledge. Maybe if you have a really good student it is okay because they get it. But normal kids just learning dance for fun, maybe it is harder to transmit that message.

10.2. What do you think could be the benefits of feeling the movement?

Well I guess we are a performing art. So ultimately we are there for somebody else and for somebody to see. So visually and aesthetically, there is a certain illusion that comes out and, I guess, to have that illusion there has to be some depth of feeling to be able to share that experience. I guess to have that cathartic experience for your audience. I guess, that has to be transferred across and without that feeling it just becomes sport or just movement.

11. In your view, what might be the critical factors from expert performance that actually could limit the acquisition of teaching expertise?

Well I think what I said before that if you have got a really good body, an easy body to work with. Sometimes the understanding of the mechanics of the technique may be just less refined.

11.1. Do you feel like there might be any other factors?

I do not think so. Maybe a lot of frustration being a professional dancer and going back to teach students because they are not as good. And they do not have the

same refinement or understanding. Or the same discipline within a class. So I think there is a lot of frustration and boredom as well.

12. You mentioned previously, that one factor that helped you a lot with your teaching was your school teaching experience. Do you think there might be other factors not related to being an expert performer that might help with your teaching?

Maybe just your interpersonal skills like how you can relate to people and how quickly you can read people. And understand people.

12.1. Do you feel like there might be some factors more critical than others? What could be the most important factors?

Maybe just reading people, I think. That would be probably pretty important for teaching.

13. Concerning practice, your practice as a teacher. So, in your opinion does your practice contribute to your development as a teacher?

Yes.

14. And what would be the factors that might facilitate your development as a teacher, from practice?

I am not really quite sure what you mean? Except, you know, when you are doing something every day then you would hope that you are getting better at it.

14.1. When I say practice as a teacher, you mentioned about working with different contexts. So, variability of contexts, does it help you to become a better teacher? Because, you experienced different contexts, so you learnt from pre professional contexts, and social contexts, and kids, and it is a little different. You mentioned that variability is considered as a reality of teaching; also there might be different objectives with all this. So this is what I mean, what factors will be more important from practices that help you in your teaching. So is variability of practice one of them? Other factors, for example, can be organized practice or just spontaneous practice.

I guess the more structured and organized it is, sometimes the easier it is. Although sometimes you just need to be flexible enough to go right away from your structure. If something is not working, to be able to go off and ignore what you planned for that lesson, And just work with where you feel that students need to go

with that when in time. And I think to do that, you have to be quite confident in your own practice.

14.2. One of the differences, for example... It is interesting because you have all these experiences and, this just came to my mind. Dance, for example, is different from sport. There are some similarities, but there are big differences, as well. And, in sport, spontaneous practice like soccer, you can play soccer just for fun, there is a big and critical influence in expertise development. So, in dance, do you feel that there might be some spontaneous experiences and practices? If there are do you feel that these might be relevant to you as a teacher?

Yes, although when you say spontaneous practice it would be different in dance. Because if I were to tell the kids: 'just get up and dance'. Most of them would just stand there and go 'no'.

14.3. What I mean is concerning your teaching. For example, spontaneous practice in teaching could be the conversations that you have with the other teachers.

Well, I guess, I spontaneously teach even within a structured class. Like there is a lot of things that, within my structure, when I am with the kids, it will go off because they will do something that would lead me into some other conversation or another practice. Or another way of doing something. So that would happen every day in my classes. Probably more so within my dance practice than within my school teaching practice. Much more so on that side.

14.4. Other factors that might be related with practice. Some of them we have already discussed, like the amount of practice, for example, the organization, mentors, role models. These can also be related to the practice. So, these things that we mentioned are there any factors that might have actually impeded your teaching practice.

I think I worry sometimes if I do not teach I will lose those skills and I will lose that relevancy. I think that I teach two year olds to dance as well and I adore them. And it is very inconvenient the time I teach them. But I do not want to let those classes go because I just feel like if I am not doing it I am going to lose those skills very quickly. So I think the lack of practice would impede on my practice.

14.5. What happens if you stop teaching? Why do you feel that you are going to lose those skills?

Well I guess I feel that I would lose that relevancy. Things change, life changes, requirements for teaching changes. And I am worried that if I take a break that I would have missed all those things. And I guess, logically, you just catch up when you come back and pick up where you have left off and retrain yourself. But, then it is just a whole lot more work to add into it.

14.6. Actually you mentioned previously, concerning the specific phases and stages of when this came out, that you needed to be immersed in the system. Would you like to tell me a bit more about that?

I guess to understand something was my catalyst for becoming a schoolteacher. Teaching dance at a school, I would just go for an hour and I would walk out. And I felt I did a professional development course and I took schoolteachers and I felt very incompetent. Even though I am very confident in teaching dance, I fell incompetent because I did not know what their world encompassed. Because I did not spend the whole day at the school teaching chemistry, drawing and music. Where did dance fit into that life? And the… Probably became my catalyst and I knew that I had to live their… To be able to talk and walk the talk. I know I had to. For them to take me seriously, and for them to take our art form seriously I had to become one of them. I had to be a teacher to understand the restrictions and the pressure and everything's that is on them to make me as a teacher more accountable. And to make what I am teaching accountable. And I feel like I have done that because I am now, I am in there. I have taught school like I am one of them. I am one of them even though I am different. We share a common link now, so when I teach dance, I know how difficult it is to get kids to me at nine o'clock on Monday morning for their dance class when really it is prime time for mathematic and literacy learning. And now, when I do pt's for teaching now, I now it is very small part of their life that dance fits in. And how to make that small part something of quality even though it is a small time wise. So that immersion as a teacher has been paramount in me becoming a dance teacher there as well, you know. And I think it changes the respect that teaches have for you and ultimately changes the respect they have for my art form. So it goes back full circle that I wanted to be a part of this culture to make a difference and I feel like I am making a difference for the art. And where those kids are going to take that understanding. And maybe those teachers will have a newfound interest in dance too.

It is not actually a waste of time or a way to fill in an hour. It is a worthwhile experience.

14.7. So you feel that you learn from them, but could they have learned from you as well?

Well I know they learnt from me because it is a skill they did not have. So as much as I am insecure about teaching chemistry, that is how they feel probably worse about teaching dance. But most people do not teach dance in primary school because they do not know where to start. I guess that is where my experience has been able to cross two pathways I guess and link into one.

14.8. So, is it fair to say that you need to be immersed, because you need to interact with the environment. With all the factors that make the system? The context, students, teachers, the organizational rules? You need to be able to interact with all these factors in order to understand how to teach

Yes, definitely.

15. Is there anything else you might want to add that we have not covered regarding your acquisition of expertise of teaching dance?

Nothing more that I could think of at the moment.

15.1. You did not mention anything about family.

I guess family comes into it a bit. I retired from dancing when I had a family,.. And I guess I was very fearful. I did not know who I was as an artist. It was very scary to not be Isabel the dancer anymore. So I guess teaching became my lifeline because it kept me in the industry. And it kept me as being someone. I did not want to just disappear into oblivion. And, I guess, teaching for me has certain flexibility because most of my teaching happens within a school term so I had school holidays. So from a family perspective, it works very well. Teaching works well for us. I question myself if I really want to be a teacher. Or am I just doing this because it is just easy. And at that moment it is easy, and it is an income. And that is where I am right now. I have not gotten any further with that thought. I just sit there at the moment because it just works for my family and me. I have had to make some decisions with my teaching. I had to pull it back because some of those next opportunities involve travel and overseas travel and I am not ready to leave my

family in order to take that next step. So I guess, to a certain extent, I will say my family holds me back but I am not negative about that and I do not find that disadvantageous. But my decisions are based around my family.

15.2. Well that is the reason of my question because sometimes factors that might not be directly related, like courses or other peers, might have a strong influence in what you do and how you do it.

And I guess I should mention financially. Teaching is a financial opportunity as well. It is money. Teaching in a school, I have superannuation, I have holiday pay, I have all those benefits of having a permanent government job. So there are those options to. I have often thought if I quit school it would be so much easier to teach in the ballet school. But financially it is not an easy way to go. It is all up and down, the pays not as good. There is no sick leave, there is no injury stuff, there is no superannuation. So, financially, teaching is a safer option for me too. And, I guess, with a family and all that, it does take priority as well. So I guess my family is dictating to a certain degree the choices that I am making.

15.3. Are there any other factors such as family that might influence?

My uncle. He tells me I should not be teaching in a school. Because I get frustrated at myself sometimes not being able to have the control I want. He does not think I belong in a school and a lot of people say that. A lot of people who knew me as a dancer would go, "what are you doing in a school, why are you teaching in a school?'

15.4. This is now? Currently?

Yes

15.5. You mentioned that your uncle took you to ballet when you were two. Has he been a strong influence in your life?

Well I guess he was a strong influence.. But when I had a couple of rough trots during my career as a dancer I would say that I am going to retire and he would be the one say to really think about what you are doing and I do not think it is your time to retire yet. Not that it made me stay, but it made me think.

<u>Part 2: Maintenance of expertise at teaching</u>

16. This second part of the study focuses on maintenance of expertise at teaching. So, what is it that you do currently in order to maintain you expertise in teaching?

I do a lot of professional development. Watching a lot of other people work is probably my key area in practical sense. So teaching ballet, we go and view the ballet company. Just try and go and see as many people as I can and view their classes. I do the same for The Royal Academy of Dancing, which is the main syllabus I teach in just viewing other people teaching the work. Just to look for tips and things like that. I do a lot of reading. I am a big reader. Just about different pedagogies and things that align with what I do. With my school teaching I do a lot of professional development in a whole lot of different areas, which is a part of being a teacher. We have to do a minimum of twenty hours per year on that. And that can involve things like, again walking into other people's classrooms and watching them teach. It could involve going to networking conferences. And working with other dance teachers, just sharing ideas. Networking really. Developing units of work. Types of work, right down to first aid courses, and all those things that when you are working with children that you have to be able to do.

16.1. When you say that you watch people teaching, is this part of a formal training or is it just something that you do on your own?

Well, I guess it is for me, although it is a part of formal training within the education department. It is called observation program, which is an official professional development program where teachers can observe other teachers. The purpose of that is that so you are not locked into your own studio or classroom. You are looking beyond your own methods and pedagogies and how things are done. I guess you are always looking for better ways of doing things, different ways of doing things.

16.2. And when you mentioned that you read a lot. What is it that you read?

I probably read the more educational side of things, so I read a lot about behavioural issues and how to deal with different personalities. And aggressive types, you know, the problems in the classroom. How to look at aggressive kids, how to look at passive kids, how to look at kids with learning disorders or learning disabilities physically and mentally. And to look at those kids and how to deal with

them. And I guess it is called differentiation: how to differentiate your class. So that everyone is getting a maximum of what you are teaching.

16.3. You also mentioned in your previous interview that you also teach professional dancers. So, to that extent, in that context, what is it that you do in order to maintain your teaching?

I think the main one for that is watching other people take class. How they format exercises, how they structure a class, in what they order they do things, how they do it, the pace of the class those sorts of things. So you can learn a lot just by watching what other people are doing. And not definitely emulate that bit-by-bit but to borrow things and adjust your own teaching strategies.

16.4. So, is this more on informal terms?

I guess so. Off your own back. I guess the company does offer sometimes, it is not watching other work; but we can come in and talk about things. It is always an opportunity to say okay this is why we are doing pirouettes with the retiré here. And this why we are doing this. And how do you feel about it and is this going to work across our whole program from professional dancers down into our training program. So there is always those professional discussions that have to happen.

16.5. I was just curious about when you watch people. What is it that you pay particular attention to? Are there specific aspects that you focus on?

Yes, there is probably two things. One is how they take the class and the actual exercises that they do, that they choose to give in that class. But the second thing I guess, and it only happened to me in the last week is to look at things that perhaps in my own practice, I had not been able to fix, something on a student. Like, a student keeps going wrong, and I keep repeating myself. And then I start to think that there is something wrong with my teaching practice. If my student still cannot achieve that, and it is not physically that they cannot achieve it but something mentally. So then, you know I heard somebody say something in a different way. Or explain it differently or use a different technique. For me, I could borrow that then and take it back into my own classroom, and see if that makes a difference. So I guess it is always questioning your own teaching strategies. Which I think in 2013 is the way you have to be as teachers. We are not experts that you have to keep readjusting your own practice.

16.6. So, is there anything else besides what you have already mentioned watching people, reading?

That is probably all apart from formal courses. You know the one I tried to do at a professional level to learn new syllabuses and things like that. I mean in the big picture, going back to do an education degree for me was how to keep my practice on top of the game. I felt as a dance teacher, that maybe I hit a point where I needed to know more. To make myself a better teacher I had to diverge off dance teaching and go into a more practical based teaching path. And learn these tricks and learn more of the philosophy and the pedagogy behind teaching. And what I… What I am doing, and why I am doing it. And with particular age groups, what is happened from there is that training has now merged back into my dance teaching. I had to apply that in. So that was really my focus as a dance teacher, that I needed that really big teacher training on top of what I already had.

16.7. If you could just tell me a bit more on how did you understand that you needed to do this? How did this came in the picture?

Sometimes I felt stale, and I felt like I was just learning off the top of my head as I went along and I did not have any formalized training in what I was doing. A lot of the things I knew, but I did not know why I knew it or where these concepts had come from. Particularly when I started going into schools in teaching dance, there is a whole different philosophy around teaching. And I realized how naive my teaching practice was. And that was why I wanted to go back and learn the theories behind what I was doing. And how I was doing. And look at behaviours, and my behaviour as well as. My students and how to read that.

17. Are there any important factors that might influence the way you teach, currently?

I guess the behaviour of my students affect my teaching. How I teach is depended on that cohort. If I have a class of thirteen year olds that are a bit ratty and chatty and lacking concentration then that is a very different approach than what I would take with a pre-professional level. They already had the focus, so my teaching practice has to change. With the younger ones I am probably a much firmer teacher. Whereas the more disciplines the students, then my discipline can relax a little bit. I

can have much more of a personal relationship with my students. And I guess I get to know them more one on one then I would with a younger cohort.

17.1. So, if this is your current practice. What might be the difference from what you taught before?

I think previously I probably approached everything the same. I guess maybe my approach was lighter. Maybe I made the mistake early on from trying to friend my students that we were on a one on one level, which does not work with younger students. You know there had to be a sense of authority without it being hierarchy. It did have to happen otherwise or else there would be a sense of chaos in a classroom. Particularly in a movement classroom, there has to be someone with that age group that is acting as the boss. We share the roll as boss sometimes, but I have to get tougher I think with those age groups.

17.2. So, when you mentioned that you approach it in a more light way, what do you mean by that?

I guess that I am a pretty friendly outgoing, pretty laid back person. So as long that I can get message across, I do not feel like I have to be bang! Bang! Bang! I do not feel like I cannot have fun in the classroom as well. That people cannot laugh. But, I have to really monitor how far I let the bar go down with the kids because kids being what they are will just grab it and run. Or jump straight over it. I just have to go gentler in my approach and sometimes not go in so friendly and relaxed. And to start things, so there is some sort of boundaries to begin and to work off the kids, how far I can lift those boundaries down. Depending on their maturity and what they have done that day usually.

17.3. And, do you think there might be any other factors that might be influencing the way you teach?

I guess sometimes my mood impacts what sort of day you have had, impacts how you teach. But if you come in fresh to the first class of the day I think that is different to what you get to fourteen hours later. And you are still going, that makes a difference. I know sometimes I had to hold my tongue because I was feeling a little bit grumpy. I have had a bad day if I am tired. Sometimes I have to bite my tongue and not take it out. Let my frustrations out on my students, which can happen on those big long days.

17.4. So I guess these other factors that you have mentioned here. Like, watching people, the way they teach, what you read and all these professional development courses. They might influence your current practice? Can these also be classified as a critical factor that might influence the way you teach?

I guess the other thing is when other people watch me teach. Probably the shoe on the other foot, you know. That could be confronting. And that could be a class as well. I think maybe things for me are probably tightened down a little bit more. But, take a little bit of the relaxed side of the class and keep it a bit more. It is always a focused class, but probably a more focused if someone else is watching which is quite nerve wrecking.. Although I am quite comfortable with dance teaching with people watching me teach, I do not feel comfortable teaching a school class with people watching me.

17.5. Why do you think that happens?

I think I know more about dance. Intrinsically I understand dance. Whereas teaching chemistry, I know less, intrinsically. So, I find that there is people way more experienced then me implementing those sort of teaching processes. So I am really at the bottom run of the ladder on that scale.

17.6. So, knowledge of the content and the experience in teaching that content.

Yes.

18. Can you still improve, or propose a better system, or approach, as a teacher?

I think you can always develop it. I think that there is a time constraint on how much you can develop it. You can work in two different fields, and both of them require twenty hours of documented professional development. On top of your full time job, there is another forty hours that you need to dedicate to developing your own practice. So I think time constraints are a really big thing in developing how you teach and what you teach and where you teach and all those sort of things. And I find that it is probably the biggest stress on being a teacher. You would never actually cross off a list and say you have done everything. ‘I am satisfied’ – you never get that. There is always another list, and there is always another course, and there is always another thing to make you get better. And there is another cohort of students

that require something different. So it is a very dynamic practice and that is stressful I think.

18.1. These demands. Do you impose it on yourself? Or are they being imposed by external bodies?

Well I think it is both. Externally to keep your registration as a teacher, either as a ballet teacher or a schoolteacher you have to meet those demands. You have to be able to document that and show that you have done it. But I think personally, a majority of teachers are quite dedicated people. So then you put that pressure on yourself that you do. You do that as well. Not just for yourself but for your practice and giving to your kids.

18.2. Do you have a system for your development as a teacher?

I do not have a system no. I just take it where I can get it. And I am always looking for things on the side that I can add into that portfolio of development. So I think there is a lot of opportunities that you have to sort of pick and choose to what fits in to your life. Externally, because it has to obviously be done outside of your own work hours. So it is your own personal contribution.

18.3. So, how do you pick what is important?

Well it is probably two things that I would choose. One is what is going to marry in best with what I am doing. So if it is a course learning a new syllabus of work for the ballet teaching. Then that would take priority over doing a samba course or something. You have to prioritize what is the most valuable to where you are practicing. That is going to make the most sense because there is no time to waste. Really in everybody's busy life you do not want to waste doing something that you will never be able to utilize.

19. Do you have any process of self-evaluation?

I think particularly when I first started teaching in a school. I self-evaluated every day. I would write a checklist out of what worked and what did not work. And then would try to self-evaluate that on paper. How am I going to change this? What am I going to do next? Over the last couple of years, that did not happen because of time constraints. Because I do not have time now to sit down and document those things. But I guess mentally, I do go home and go, that did not work and how am I

going to change that process that is going to work for the next class. So mentally I am constantly re-evaluating those processes. I work by lesson plans and unit plans. So eventually, by the end of the unit, I can make notes on what needs to be changed, if I deliver that unit of work.

20. If when you started to teach you knew what you know now, how would you go about your development as a teacher?

I do not think it would be any different except that at that stage I would have been a lot younger and would not have had so many family pressures. So you could probably do a bit more. If I started teaching young, I would have had a lot more time to do all this. I would like to think maybe that I would have done a teaching degree earlier. But I do not think that would have been any better for me at that stage. I think it evolved as it evolved like when I was younger I had no desire to make teaching a career really. So I think my teaching process has just evolved. One thing, kind of, led to another. Because I am a conscious teacher, the more I have desired to learn. So I guess that is the way, the process of what it would do. And that would keep going. I can think that I would like to do more study and that would happen again and again. You never know everything. It is that constant thirst for knowledge.

20.1. So, there is one aspect that I am kind of curious about. You do not follow a specific system for your development. So, you kind of take opportunities, as you perceive them, that they will be beneficial to you. But all opportunities, courses, people that you observe and books that you read and all these information appears to be all kind of aligned with something specific, towards a specific goal. So, when you do this, is it because it is important for your development? Because you want to achieve something? So, what is it that you want to achieve?

Well I guess you want to pass on whatever knowledge you have. For me, as an artist, I feel that it is an obligation to share what I know and what I have learnt. I need to pass that on. And I do not know, I thought about when I talked to you last, the sense of altruism. You know… Am I trying to go above and beyond or is it just an ego. Is it an ego thing? Do I like to pass on information because it makes me feel good that the kids or my students feel good. I guess maybe it is a fine line between both ‘I feel good’ and that is probably my goal. If I could see that my class feels good about themselves, and their producing work. I see choreography come out. I see them do a performance. I see them have worked for twelve months and get from A to

B of improvement and that makes me feel good and I know I have done my job well. So again, I do not know if I am giving or receiving. Maybe teaching is both ways. And when you do not hit those points. When you have a class that does not work. It is ratty and disorganized and the kids are off task. Then I would blame myself as a teacher. And that is when you know you got to do more personal development. Like how am I going to solve this problem and go up from there.

21. Do you have any current role models or mentors concerning your teaching expertise maintenance?

No. Not really. I had a mentor last year. I got two teaching partners in bot industries I work in that are very experienced women in what they do. And I guess they are our mentors, in a sense that I could sounds off ideas and I rely on those people that I am doing the right thing, you know. If I question my own practice or question a decision, they probably, as my mentors, would be the people that could set me straight in actually saying that it is probably not the best way to approach it. Try this. So, I do rely on mentors.

21.1. So what is the nature of your relationship? How did things happen?

Well they are colleagues. So they are both teachers in their own separate areas as well. So there is an understanding I guess and an experience that sometimes if the answer eludes me because it is too close to home I could speak to them and vice-versa. With the one on the dancing side, she bounces as much of me as I do of her.

21.2. So what is it that you discuss with them?

Well we just discuss practices. Children and how they work. Offset background. Why is this kid sobbing in a corner because they could not do a pirouette today and where is that come from. Why are they working like that? For example last night, my kids were really ratty even though they have got a really big exam coming up on Monday. Yet, they were all over the shop talking and very complacent, you know. And we discussed why this was happening and if it is because it is the most stressful time. And we talked about why tonight of all times? And we could work out then together if it is their way of coping with it. They are over it. They have worked so hard up to this point. They can see the light at the end of the tunnel. You know we could make sense of it then and there. Those kids went

to her for their next lesson so then she could adjust her practice to pull them back in and focus them back from where they come.

22. Is there anything that we did not cover that you would like to add concerning this part of the interview?

I guess for me it is also to keep my consistency to keep my teaching is part of my development as well. I think if I stop teaching then I am going to lose those skills. Those skills would become less refined. So, for me, the consistency of what I do is all learning to that improvement and that development. So I feel the pressure on myself to keep going and to keep learning and keep teaching wherever I can, whatever I do to use those opportunities.

22.1. Would it be fair to say that you see teaching as something that you need to practice to become good at? And you become good by practicing? So it is kind of a cycle?

It is definitely a kind of a cycle. And it is definitely dynamic. Teaching is dynamic. It does not stop. It is so circular like what you are saying. Always another level to go and then you got to go right back to the beginning and start again and work it up again and try again. I think that is probably a really good way of saying it.